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## Inside Dope

By GEORGE F. TAUBENECK

*Learn to live and laugh — thus delay your epitaph*

**Stories of the Week**
**No Longer Is It Wise To Be Skeptical**
**The Real McCoy About Castro, Etc.?**

### *Stories of the Week*

Quite a line had the panhandler who accosted John D. Rockefeller, Sr.

"I've walked 300 miles just to see you, sir," stated the bum. "All along the route everybody I met told me that you are the most generous man in the world."

Rockefeller handed over a dime.

"Now," he commanded, "backtrack over these 300 miles and tell all those people they were wrong."

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Father studied his son's report card in dejected silence.

"Bobby, I can say this," he breathed heavily. "Obviously you haven't been cheating."

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### *No Longer Is It Wise To Be Skeptical*

Duke University's Dr. Joseph B. Rhine gave a mighty impressive performance a while back while enlightening the Engineering Society of Detroit about modern psychical research.

Such esoteric adventures as extrasensory perception, psychokinesis, and teleportation are familiar ground to this Duke U. professor.

But when the meeting was thrown open for questions, the controversial professor ran into a bit of rough going. Let it be said that he handled his hecklers ably.

Dr. Rhine has been director of the university's Parapsychology (*beyond* psychology) Laboratory for nearly 30 years. His "parapsychology" embraces the phenomena of:

*Extrasensory perception* (ESP), "awareness of things not signalled by normal senses."

*Clairvoyance,* such as sensing that Aunt Fannie is falling off a cliff while you're 500 miles distant.

*Perception,* foreknowledge of the fact that Aunt Fannie is going to fall off the cliff tomorrow.

*Telepathy,* awareness of another's thoughts—mental telegraphy.

*Psychokinesis,* the actual physical movement of objects by mental effort alone.

*Teleportation,* the movement of animate or inanimate objects

*(Continued on Page 20, Col. 1)*

## *NLRB Invokes New Secondary Boycott Rules*

WASHINGTON, D. C.—General Counsel Stuart Rothman of the National Labor Relations Board announced that a New Jersey local of the Plumbers' Union has entered into a court agreement to stop refusing to refer workers or clear a foreman for an employer's work on a construction project in what was alleged to be an effort by the union for force another employer off the project.

The construction job involved is otherwise staffed by employes who are union members.

This is the first case involving this type of conduct brought under the new amendments to the Taft-Hartley Act's ban on secondary boycotts.

The union is Local 380 of the Plumbers' Union, AFL-CIO, located at Princeton, N. J.

The agreement was entered in U. S. District Court in Trenton, N. J., at the direction of Judge William E. Miller as a result of a petition by Rothman for an injunction against the conduct.

**Other stories on recent actions involving the National Labor Relations Board are on page 2.**

The union did not concede that it had violated the act. This issue will be litigated in a concurrent proceeding before the board. The injunction was sought under a provision of the law that requires the general counsel to seek an injunction whenever he has reasonable cause to believe that a charge of secondary boycott is true.

The general counsel acted after investigation of charges filed by the Boro Plumbing & Heating Co. of South River, N. J. It was the Boro company which was refused workmen or clearance of its supervisors for plumbing work on construction of a plant for the American Cyanamid Co. at Princeton, N. J., the NLRB said.

Source of the dispute was alleged to be a third company's

*(Concluded on Back Page, Col. 1)*

## Supplies Wholesaler Office Mgr. To Stand Trial for Embezzlement

PHOENIX, Ariz. — Byron J. Maddox has waived a hearing on charges of having embezzled more than $80,000 over a period of several years from his employer, Arizona Refrigeration Supplies, Inc. here and will stand trial on the charges. No date has as yet been set for the trial.

The alleged embezzlement has not affected the current operations of the business of Ari-

*(Concluded on Back Page, Col. 2)*

# SOME 200 FIRMS TO EXHIBIT IN SOUTHWEST EXPOSITION

DETROIT — Some 200 exhibitors from 28 states will display their wares for 1960 at the forthcoming 2nd Southwest Heating & Air-Conditioning Exposition.

The exposition management announced that all available exhibit space has been taken at the Dallas (Texas) Memorial Auditorium where the show will be held Feb. 1-4 under the auspices of the American Society of Heating, Refrigerating & Air-Conditioning Engineers in conjunction with its semi-annual meeting.

Exhibitors representing the full scope of the heating and air conditioning industry have been drawn from all parts of the country, the management said.

Air conditioning, heating, ventilating, and refrigerating products will be displayed at the exposition, covering commercial, industrial, and residential fields and revealing many developments in components and in equipment for field installation and servicing, it was reported.

A wide variety of new products will be brought out, new exhibitors will make the bow to the national market, and a number of established concerns will branch out into new fields, according to the show management.

**Exposition hours: 12 noon to 10 p.m. daily, Monday, Feb. 1, through Thursday, Feb. 4.**

**An up-to-date list of exhibitors at the exposition is on page 39.**

Among companies which will introduce new products is Drayer-Hanson.

This firm reported that, spurred by recent, heavy orders for air conditioning equipment for multi-storied buildings, it is re-emphasizing its recent entry into the field of high-pressure equipment design and manufacture. The new lines, designated HCD and SCD, range in capacities from 5,000 to 25,000 c.f.m.

A high-pressure unit to be displayed will have a plastic cut-away top for full viewing. Drayer-Hanson also will show a new 30-ton air-cooled condenser and a fully-operative air conditioning system in miniature including control panel, evaporative condenser with desuperheat coil, blower-fan-filter assembly, and grille outlet.

Another West Coast manufacturer, Recold Corp., announced that it will preview two new product lines. One is a new series of 12 small, compact air handling units. The "AH" line features modular construction.

*(Concluded on Page 47, Col. 1)*

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## Mueller Climatrol, York Announce Residential Electric Heating Units

* * *

### *Mueller Furnace Adapts To Cooling*

MILWAUKEE—A new electric furnace gives Mueller Climatrol deeper penetration into the electric heating market, it was announced by the Worthington Corp. division.

The furnace supplements the established Mueller Climatrol heat pump line.

"In expanding our electric heating line," said George M. Hase, manager of planning, "we have decided to provide the homeowner the means for complete year-round control of home climate regardless of fuel.

"One of the main features of our electric furnace is the provision for fast and economical adaption to summer cooling," he said. "Homeowners also have control over air movement and therefore have control over cleanliness and humidity."

*(Concluded on Page 47, Col. 4)*

* * *

### *York Duct Heater Fits Behind Diffuser*

YORK, Pa.—A new all electric duct heating system for use in residences in connection with a central air conditioning unit has been announced by the York Div. of Borg-Warner Corp.

The system consists of electric duct heating units installed directly in the air distribution system using the air moving equipment of a self-contained or remote air conditioner for the distribution of heated air.

The use of individual room duct heaters located immediately before the outlet diffuser in the room, and controlled in the room by a separate thermostat, allows for complete flexibility in meeting individual heating requirements and minimizes operating cost, according to Austin Rising, vice president and director of marketing.

*(Concluded on Page 4, Col. 5)*

## West Coast Branch Opened by Airtemp

LOS ANGELES — Airtemp Div. of Chrysler Corp. inaugurated its first West Coast branch office and warehouse on Jan. 14 with an open house here.

Joseph B. Ogden, vice president of sales, and Sydney Anderson, former general manager of the Packaged Heating & Cooling Dept., now on West Coast assignment, acted as hosts.

Ogden stressed that the West Coast branch did not affect the

*(Concluded on Page 4, Col. 5)*

**Recent NLRB Rulings**

## *Employer Can't Lock Out Employes Who Fail To Show Up for Work*

SALEM, Ore.—The National Labor Relations Board has overruled Trial Examiner Maurice M. Miller who on July 15, 1958, held that a group of Oregon plumbing and heating contractors had been guilty of unfair labor practices.

The board said the evidence fails to prove that the companies locked out their employes.

Favored by the NLRB's final ruling were the Williamette Association of Plumbing & Heating Contractors, Inc.; Hoffman Engineering Co.; Buchanan Co., Inc.; Lord Bros., Contractors; and Widmer Plumbing & Heating Co.

The charge that they had locked out their employes stemmed from employer action on Feb. 28, 1957, in "buttoning down" work projects in the face of a union threat. The Plumbers and Steamfieers Local 347, United Association, made the charge.

The NLRB ruled that the union had planned, threatened, voted, and prepared for a strike and that the employers were entitled to rely on the strike threat as being effective on March 1, 1957.

A last minute effort by the union to call off the strike was described as "abortive" because no force of employes capable of performing work showed up.

"It is obvious that an employer cannot lock out employes who do not report for work," said the NLRB ruling, which found no violation had occurred and dismissed the complaint against the employers in its entirety.

●

## *Won't Split Engineers From Hotel Employes*

WASHINGTON, D. C. — The National Labor Relations Board has dismissed a petition filed by Local 491, 491A, and 491B, Operating Engineers, AFL-CIO, which sought to sever a unit of operating engineers, air conditioning and refrigeration mechanics, and maintenance mechanics from an existing hotel-wide unit at the Diplomat hotel, Hollywood, Fla.

The intervenor, Local 339, Hotel & Restaurant Employes, AFL-CIO, moved to dismiss on the grounds that the unit sought was inappropriate and that its existing contract with the employer operates as a bar. The board concluded:

"With respect to the unit which the petitioner seeks to sever, we have recently held that, in the hotel industry, maintenance employes of the type involved herein may not be severed from an existing broader unit, as they do not constitute a craft or traditional departmental unit, (Seville hotel, 125 NLRB No. 42).

"We therefore grant the intervenor's motion to dismiss the petition. Because of our finding with respect to the unit, we find it unnecessary to resolve the contract bar issue."

The NLRB also dismissed similar petitions filed by the same locals and pertaining to the Hollywood Beach Hotel Co., Inc., Hollywood, Fla.; Biscayne Terrace Hotel, Inc., Miami; and The Castaways, Miami Beach. The board found that the proposed units were inappropriate.

●

## *Rules Against Biloxi Plumber Hiring Hall*

WASHINGTON, D. C. — A trial examiner for the National Labor Relations Board has recommended that Southern Electrical & Pipefitting Corp. and Local 568, Plumbers & Pipefitters, AFL-CIO, Biloxi, Miss., cease operating any exclusive hiring hall arrangement except under the standards specified in the "Mountain Pacific" case.

The examiner, C. W. Whittemore, also recommended that the company and union reimburse company employes "for monies illegally exacted from them." Charges filed by an individual alleged violations of the National Labor Relations Act.

Other recommendations of Whittemore, according to an NLRB announcement, were that the company offer the charging party immediate employment "to the position in which he was unlawfully refused hire in November, 1958, and offer him back pay, and that the union notify the company that it has no objection to the hire and employment of the charging party or any other person without prior or subsequent clearance or job referral from it, and offer him back pay.

## 53 Organize RSES 'First State Chapter'

WILMINGTON, Del. — The new "First State Chapter" of Refrigeration Service Engineers Society was formed Jan. 5 at the Tower Hill School here.

This chapter represents 53 charter members.

Elected president was Edward Forenski, plant superintendent of the Wilmington Tower Hill School. Other officers are Marcus P. Anderson and John B. Schutze, first and second vice president, respectively; Wilmer Reed, secretary; William B. Sharp, Sr., treasurer; Norman Steward, sergeant-at-arms; and Irving J. Greenberg, educational director.

The chapter, representing Delaware and border states, will meet every second Tuesday of the month at the Tower Hill School at 8 o'clock.

## Tell Silver Shield Story at Tulsa

TULSA, Okla. — During a meeting scheduled for Wednesday evening, Jan. 20 at the Service Center of the Oklahoma National Gas Co. here, heating and cooling dealer-contractors from throughout the Tulsa County marketing area — some 140 of them — will get first-hand the full story of the Silver Shield concept, according to the National Warm Air Heating & Air Conditioning Association of Cleveland.

Arrangements for the meeting were made in cooperation with Charles W. Hessmer, Hessmer-Tulsa Co., chairman of the Silver Shield Action Committee. Also in attendance will be 30 dealer-contractors from Broken Arrow, Oklahoma City, Claremore, Sapulpa, Bixly, Bristow, and Sand Springs.


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**Look what you get:**

1. First quarter stock on deferred payment till June 1st . . . and no interest charge!
2. $100 worth of lighted signs . . . truck painting . . . billboards . . . etc. . . . FREE!
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That's what your American-Standard Air Conditioning Division Distributor is ready to give you, when you sign up by taking a small working stock on deferred payment during the first quarter. Here's a deal that will give you a running head start into fabulous modernization markets of the 60's!

**SEE YOUR DISTRIBUTOR TODAY!**

## Contractor Offers Monthly Heating, Cooling Check-Up

NEW ORLEANS — Suggesting that an air conditioning or heating system is as much in need of a "1,000-mile check-up" as the automobile, General Heating & Air Conditioning Co. announced in a letter to customers a monthly check-up plan.

Headed "How About a Ten-Thousand Mile Check-Up On Your Air Conditioning System?" the letter said:

"We check our cars every 1,000 miles, to keep them in good running order. This represents about 30 hours of operation at 35 miles per hour. On the average, a car is checked twice a month.

"During the same month your air conditioning or heating system might have operated 400 hours. This would amount to 14,000 miles, if it was done in a car, at 35 miles per hour.

"It does not seem unreasonable, then, to suggest that your air conditioning and heating system should be checked once a month. Most break-downs could be foreseen and costly repairs often eliminated, if a qualified man, following the manufacturer's recommended procedure, checked the equipment monthly.

"Yet, most of us never notice our cooling or heating systems until they break down!

"To reduce the frequency and magnitude of these breakdowns, and the expense of repairs, we offer a monthly checkup plan. It takes about an hour for a qualified man to check out the average 3 or 5-ton system; perhaps an hour and a half, the first trip. The current rate is $6.70 per hour."

A card was enclosed for reserving this service.

## Sons Succeed Dads In Trane, Reznor Posts

DETROIT — Appointments announced recently by The Trane Co., La Crosse, Wis., and Reznor Mfg. Co., Mercer, Pa., disclose that two sons succeed their fathers who have retired from field sales posts.

Trane announced that Thomas Shimanski replaces his father, V. E. Shimanski, as manager of the sales offices in Madison and La Crosse. The elder Shimanski retired after 34 years with Trane. His son has been with Trane since 1948.

Reznor announced that J. William O'Brien succeeds his father, Joseph H. O'Brien, as district sales manager for southwestern Pennsylvania and northern West Virginia. The father had been district sales manager for Reznor for 23 years.

## Heat Pumps Selling at Rate of 2 Per Week In Portland, Ore. Area

PORTLAND, Ore.—This city, described as an "interested city" in the special heat pump issue, Sept. 21, 1959, is continuing and increasing that interest, according to Bob Seaberg, air conditioning sales engineer of the Portland General Electric Co., the local utility.

"There have been 21 more residential installations and nine more commercial installations since September," states Seaberg. "Heat pumps are now selling at the rate of about two per week in this area."

Describing what he considers the most interesting of the new installation, Seaberg says, "The job makes use of a 30-ton water-to-air Typhoon heat pump and a 500-gal. tank which contains exhaust water from the heat pump and from the water-cooled condensers of the refrigeration equipment of the new Big C Market.

"This water is mixed and maintained at 80° and is sent through the heat pump and compressor condensers. When the water becomes too warm in the tank, it is pumped up through a cooling tower and back into the tank."

Seaberg added that 20 copies of the NEWS reprint, "Heat Pump—A Total Look," have been distributed throughout PGE's sales department, "so each of our men have a copy of this excellent booklet."

***Heat Pump Installations on PGE System***

| Mfrs. | Residential | Commercial |
|---|---|---|
| **AIR-TO-AIR** | | |
| 1 | 19 | 7 |
| 2 | 16 | 18 |
| 3 | 2 | 2 |
| 4 | 3 | .. |
| 5 | 3 | 2 |
| 6 | 6 | 3 |
| 7 | 3 | 1 |
| 8 | 5 | 4 |
| 9 | 2 | 1 |
| Total | 59 | 38 |
| **WATER-TO-WATER** | | |
| 10 | .. | 1 |
| 4 & 11 | .. | 1 |
| 12 | .. | 1 |
| 1 | .. | 1 |
| **WATER-TO-AIR** | | |
| 8 | 1 | 2 |


# -Standard 1960 PROFIT EXPRESS!

**DEFERRED PAYMENTS! SPECIAL PROMOTIONS! PRIZE VACATIONS-FOR-TWO! THOUSANDS OF GIFTS!**

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"Old-Fashioned Bucks" are symbolic of the good old-fashioned *extra* quality and value we build into all our American-Standard warm-air furnaces. You will receive "Old-Fashioned Bucks" with every order you place for American-Standard furnaces.

Send for your *Big 600 Page Wholesale Bargain Catalog TODAY* . . . buy American-Standard furnaces . . . and get your share of these good "old-fashioned bucks"!

### NO. 4: Trav-O-Rama!

Win exciting all-expense-paid vacations for two! *You pick where you want to go and when you want to go!* Bermuda . . . Miami Beach and Nassau . . . Las Vegas . . . Mexico City and Acapulco . . . Miami Beach and Havana . . . . Hollywood and San Francisco . . . Jamaica . . . Mackinac Island . . . Colorado Springs . . . Miami Beach!

It's so easy to win, it's undoubtedly the air conditioning industry's most exciting vacation sales contest for dealers. See your American-Standard Air Conditioning Division Distributor today. He'll give you all the details. We can tell you this: the sooner you enter the contest, the easier it is to win. So act fast! You'll like Trav-O-Rama!

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AIR CONDITIONING DIVISION
ELYRIA, OHIO


## Calumet & Hecla Acquires 'Most' of Flexonics Stock

CHICAGO—Calumet & Hecla, Inc. has acquired "substantially" all of the common and preferred stock of Flexonics Corp., Maywood, Ill., through an exchange of its own common stock, H. Y. Bassett, president of Calumet & Hecla, announced.

If all the Flexonics stock is acquired, Bassett said, 188,340 shares of Calumet & Hecla common will be exchanged.

On Sept. 30, 1959, there were 1,976,237 shares of Calumet & Hecla common outstanding.

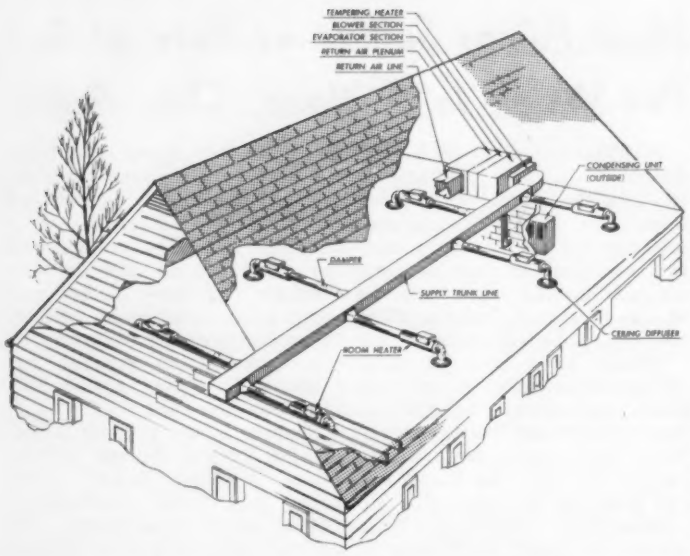
Flexonics will operate as a subsidiary.

## Bell & Gossett Buys Colorado Research

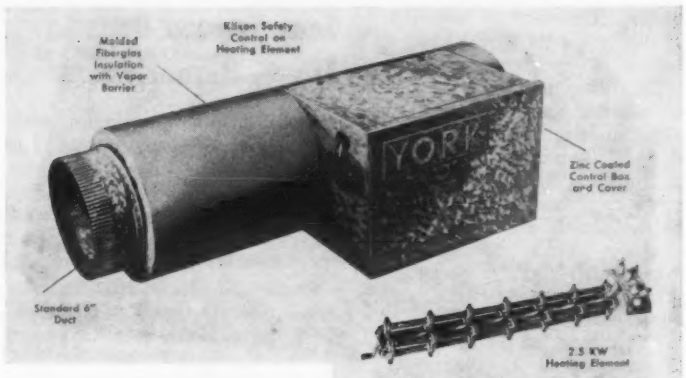
MORTON GROVE, Ill.—Colorado Research Corp., a subsidiary of Carrier Corp., has been purchased by Bell & Gossett Co.

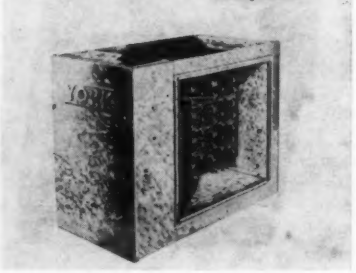
Announcement was made by R. E. Moore, president of Bell & Gossett, and Melvin C. Holm, vice president and chief financial officer of Carrier. The purchase price was not disclosed.

Colorado Research Corp. is a leader in the development of new electronic devices for government and industry the announcement said. Moore said the addition of Colorado Research products and facilities to Bell & Gossett's existing line of electronic items will enable the company to advance more rapidly in this field.




**ATTIC INSTALLATION** of the new York electric heating and cooling system requires a minimum of alterations to existing buildings. Ceiling diffusers are dropped into each room and a centrally located return air grille installed. This gives year-round heating, cooling, and dehumidification with the lowest duct loss during the heating season, according to York.


Molded Fiberglas Insulation with Vapor Barrier
Klixon Safety Control on Heating Element
YORK
Zinc Coated Control Box and Cover
Standard 6" Duct
2.5 KW Heating Element




**YORK ELECTRIC HEATING SYSTEM** consists of electric duct heating units installed directly in the air distribution system using the air moving equipment of a self-contained or remote air conditioner for the distribution of the heated air.

## York Heating--

*(Concluded from Page 1, Col. 4)*

Another feature of the new system is a tempering heater located in the main duct at the fan outlet to take the chill out of the air going to spaces where there is no call for additional heating. An interlocking relay is included in the assembly to prevent operation of the tempering heaters while the cooling unit is in operation.

John Rose, merchandise manager for the duct heating system, said that test installations show this to be an exceptionally economical all electric heating and cooling application.

In addition to its clean, flameless heating, Rose lists other advantages as:

Individual room control; low voltage thermostat system; all air circulated and filtered; extremely low duct heat loss with units near outlet diffusers; a single model for requirements from 530 to 8,530 B.t.u.h.; engineered to provide cooling with either the self-contained York "Pathfinder" or split-system "Twinline" air conditioning units.

## Airtemp Branch--

*(Concluded from Page 1, Col. 5)*

Airtemp Div.'s general policy of distributing products through independently owned and operated wholesale distributors.

"On the West Coast we were unable to find qualified independent wholesale distributors and still retain, much less expand, our place in the industry. Therefore it necessitated our opening of the Los Angeles office and warehouse," Ogden stated.

He reaffirmed the division's desire to deal through independent dealers when possible and pointed to the fact that Airtemp had recently closed branch offices in both Detroit and Kansas City.

Ogden said that Airtemp had decided to open a West Coast branch in view of the tremendous sales potential in the Los Angeles area.

"Our market studies point towards a phenomenal growth in air conditioning and heating sales during the 60's," Ogden said.

"The rapid population growth in Southern California, and the entire West Coast, the flourishing economic predictions for the next decade, the area's climate and the ascending acceptance and demand for air conditioning implicate the strides which our industry will take in the near future," Ogden pointed out.

Guests at the open house saw the branch facilities, a complete line of Airtemp air conditioning and heating products, and the 90-ft. display which Airtemp entered in the 11th Exposition of the Air Conditioning and Refrigeration Industry show at Atlantic City last November.

The 30,000-sq. ft. office-warehouse is located at 6001 E. Randolph St., Los Angeles 22.

California air conditioning and heating dealers, builders, consulting engineers, and civic officials were invited to the open house.

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YOU'LL HAVE MORE *MONEY*
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VENTILATING AND REFRIGERATION
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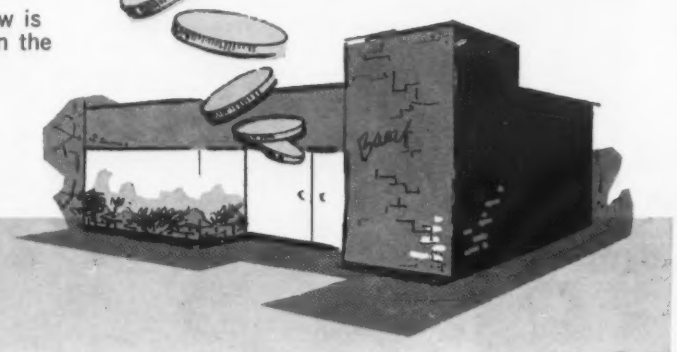
APRIL 29, CONTRACTORS' DAY
APRIL 30, PRACTICAL APPLICATIONS' DAY



For further information contact:
FRED J. TABERY, EXHIBIT MANAGER
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Telephone: Richmond 9-1091

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**HOTELS and MOTELS** York keeps rentals competitive, helps assure full occupancy all year around.

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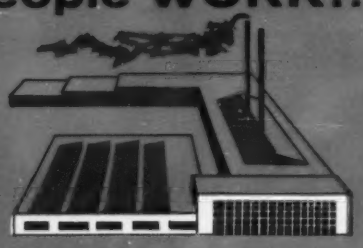
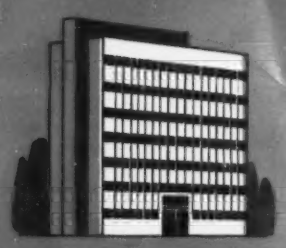
**STORES**—York helps attract more customers, keeps them longer, and puts them in a buying mood.



**FACTORIES**—York boosts output and profits, cuts employee turnover, protects product quality.

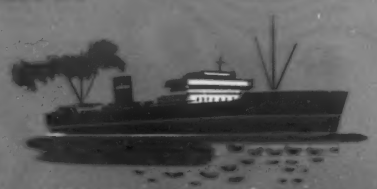


**OFFICES**—York increases employee efficiency, cuts absenteeism and clerical errors, boosts morale.

### Wherever People TRAVEL...

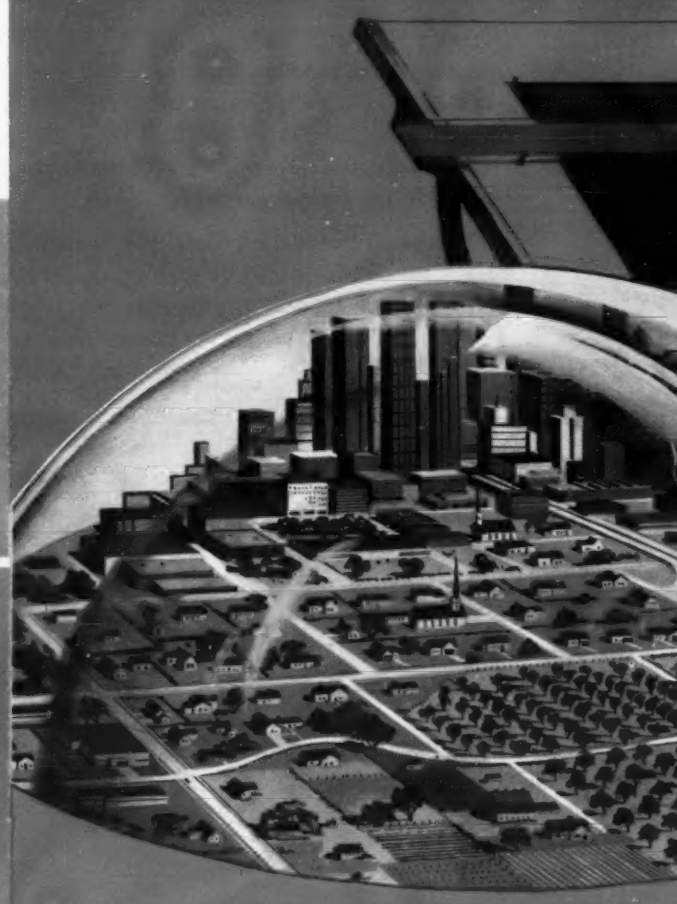
**CARS**—York's compact, powerful auto compressor is used by 90% of independent car air conditioners.

**TRUCKS**—York all-electric, hermetic truck refrigeration unit delivers constant cooling from idle to top speed.



**SHIPS**—York has equipped 5 out of 7 Mariners. York offers service facilities in all major world ports.

*"I can press a button . . . and ripen an acre of fruit... reduce clerical errors...give 3,000 people a good night's slee*



**YORK** B/W DIVISION

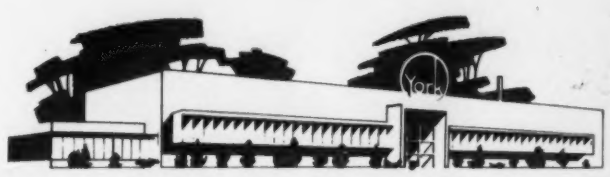
**...continues the development refrigeration and heating equi effective control of temperatu**

ment of advanced air conditioning,
equipment for more
erature, humidity and air cleanliness!

# YORK·BORG-WARNER creative engineering continues the development of tomorrow's air conditioning and refrigeration equipment at these modern research centers...

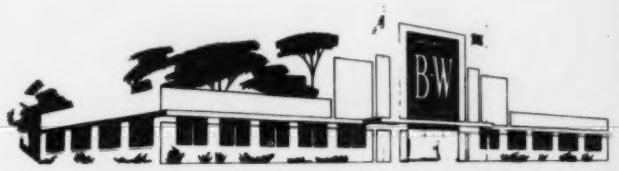
**YORK Research Center, York, Pennsylvania**

Many pioneering achievements have originated here. This laboratory contains a completely tooled shop in which experimental equipment is built and thoroughly tested. York, a leader in the field since 1885, puts 75 years' experience into every product.



**BORG-WARNER Research Center, Des Plaines, Ill.**

This multi-million dollar, 36-acre laboratory is equipped with the very latest scientific devices and facilities. Precision instruments, such as the electron microscope which magnifies 100,000 times, enable detailed studies of materials and operating characteristics.




## SEE YORK EQUIPMENT ON DISPLAY AT THESE TRADE SHOWS...

Southwest Heating & Air Conditioning Exposition
Memorial Auditorium • Dallas, Texas
Feb. 1-4, 1960 • Booths 708-710 & 807-811

The Western Air Conditioning, Heating, Ventilating & Refrigeration Exhibit and Conference
Shrine Exposition Hall • Los Angeles, California
April 27-30, 1960 • Booths 211-213 & 312-314

## OR MAIL THIS COUPON FOR COMPLETE INFORMATION

Mr. Austin Rising
Vice President & Director of Marketing
York Corporation, York, Pennsylvania

Please send me complete product information on the York air conditioning, heating and refrigeration equipment I've checked below:

- ☐ 3-pipe Hi-I Induction System
- ☐ Compound Air Source Heat Pump
- ☐ Lithium Bromide Absorption System
- ☐ Hermetic Turbopak Water Chiller
- ☐ Central Station Air Conditioning Units
- ☐ Packaged Commercial Air Conditioners
- ☐ Residential Heating and Air Conditioning
- ☐ Room Air Conditioners
- ☐ Ice-Making Equipment
- ☐ Other_____

NAME_____ COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

**YORK**

YORK CORP., SUBSIDIARY OF BORG-WARNER CORP.

BW DIVISION

BORG-WARNER
RESEARCH & ENGINEERING
MAKE IT BETTER

Air Conditioning, Heating, Refrigeration and Ice-Making Equipment • Products for Home, Commercial and Industrial Installations

Factory assembled models from 50 to 150 tons cooling, up to 1200 MBH heating at 0°F. Larger, field assembled systems to meet your requirements.

# YORK Compound Air Source Heat Pump can heat and cool simultaneously!

*Cools one side of building... uses rejected heat to warm the other side!*

Because of wide variations in solar and internal heat loads, multi-story buildings require heating *and* cooling at the same time almost all year around. York's air source heat pump which can heat and cool simultaneously is the ideal answer for such a situation.

The York Heat Pump can take heat from the sunny side of the building where cooling is needed, and move this heat to the shady side where warmth is needed. Or this advanced York system can take heat from any area to be cooled, such as a data processing machine room or telephone exchange, and move it to any area needing warmth.

In this way, the York Heat Pump delivers 66⅔% of the heat absolutely free. For every kilowatt of electric power that's put into the system, *three* kilowatts worth of heat come out. The free heat comes from such sources as outside air, rejected heat from cooling, waste heat from processing, etc.

The York Heat Pump with exclusive compound compression can wring heat from −10°F. air, making it applicable for year around heating and cooling in any part of the U.S. No supplemental electric strip heating is required. The compound design produces up to 67% more heat than a single stage system from the same electric power. York Heat Pumps can be completely factory assembled and tested for simple, low cost installation, and absolutely dependable operation.

## YORK Air Source Heat Pumps in Action at...

**SYLVANIA LABORATORY, AMHERST, N.Y.**, uses a York Heat Pump to heat and cool the 85,000 sq. ft., 2½ story building. System delivers 250 tons of cooling in summer and 2400 MBH heating in winter to York perimeter fan-coil units.

**RICH'S DEPT. STORE, ATLANTA, GA.**, in the huge, modern Lenox Square Shopping Center, is heated and cooled by a York compound air source heat pump. Cooling capacity is 820 tons and the heating capacity is 3400 MBH.

# YORK
# 3-Pipe Hi-I Induction System makes both heating and cooling continuously available at each unit!

*Gives instant response and slashes operating costs!*

Multi-room buildings often require heating for some spaces and cooling for others simultaneously. Up to now this has been done in one of two ways: 1) Double duct systems with a warm and cold air stream that is blended at the air outlet to provide desired room temperature, or 2) Conventional induction systems that deliver warm ventilating air while circulating a variable quantity of cold water. Either method achieves control in the conditioned space by consuming both heating and cooling energy simultaneously.

York's 3-pipe system provides either heating or cooling at any time without wasteful mixing. Both hot and cold water are piped to each unit. A York-conceived automatic 3-way non-mixing control valve selects one or the other and modulates flow to provide desired temperature. If neither heating or cooling is needed, water shuts off.

Some like it hot, some like it cold. Having heating and cooling capacity always available at each unit permits wider temperature variation from room to room, and gives instant response to changes in load or thermostat setting. Assures highest level of personalized comfort ever offered!

Simplicity of York system means substantial savings in operating costs, low initial cost and reduced space needs. Added cost of the third pipe is offset by eliminating change-over problems, reheat coils, duplicate zoning equipment, simplifying air distribution and control systems.

York offers a choice of 30 different models of induction units to match any application.

York automatic non-mixing 3-way control valve—heart of the 3-pipe system.

## YORK 3-Pipe Hi-I Induction Systems in Action at...

**STATLER-HILTON HOTEL, BOSTON,** delivers instant comfort to 1300 guest rooms with York 3-pipe system. Using existing steam, turbine-driven centrifugal and steam-powered absorption water chillers economically provide 812 tons cooling.

**PENN 17 OFFICE BUILDING, WASHINGTON, D.C.,** will be heated and cooled with a York 3-pipe peripheral system consisting of 550 Hi-I Induction units. Two York Turbo pak water chillers will supply approximately 650 tons refrigeration.

Capacities from 100 to 740 tons refrigeration

# YORK Lithium Bromide Absorption System Cools with Steam or Hot Water!

*Uses less pump horsepower per ton of cooling!*

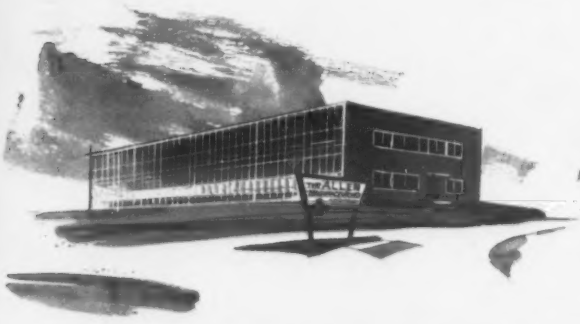
Here is a unique system that can use an existing steam supply, either from boilers or district steam companies, to provide chilled water for comfort or process cooling. This means significant savings in operating costs over motor-driven compressor systems. Hot water or process fluids can also be used as the heat source.

York's Absorption System is virtually maintenance-free. Except for 3 small pumps and motors, it has no moving parts. The absence of major moving parts insures extremely quiet, vibration-free operation. This permits installation anywhere from basement to roof without special foundations or sound deadeners.

Installation costs are cut by eliminating large expensive starters and heavy electrical conduit. System operation is automatic and completely flexible, easily handling all load changes from overload down to zero.

In the York Absorption System, plain water is the refrigerant and lithium bromide, a simple salt, is the absorbent. Both these fluids are non-toxic and non-explosive, and never need replacement once charged into the system. York's advanced fluid distribution method assures quieter operation, rapid start-up and close control. A steam valve provides simple, direct capacity control.

## YORK Lithium Bromide Absorption Systems In Action At...



**ALLEN MFG. CO., BLOOMFIELD, CONN.,** uses their excess boiler capacity in summer to provide cooling. A 230-ton York Absorption System air conditions the office and cafeteria and a 170-ton unit chills process water for plant usage.

**CARSON PIRIE SCOTT & CO., CHICAGO, ILL.,** uses a 200-ton York Absorption System to cool 120,000 sq. ft. of office, cafeteria and retail sales space in their 11-acre warehouse building. They expect 25% savings in operating costs.

**TISHMAN BUILDING, BUFFALO, N.Y.,** has a 530-ton York Absorption System supplying cooling to a York Induction Air Conditioning System. The entire refrigeration and heating plant is located on the roof of the 20-story building.

# YORK Turbopak World's First Packaged Hermetic Centrifugal Water Chiller!

*Takes 50% less space!*

York's Hermetic Turbopak is a full 50% smaller than previous models, saving valuable floor space and enabling installation in confined or non-productive areas. Secret of the unit's amazing compactness is the exclusive York Borg-Warner power transmission, which permits a 50% reduction in the size of the compressor rotor.

To save on installation costs, the Turbopak is completely factory assembled and insulated. It is shipped and rigged as a single unit. There's no time-consuming aligning or refrigeration piping required on the job, just simple water and power connections.

The York Turbopak is exceptionally quiet and vibration-free, permitting it to be located anywhere in the building that's convenient. The system is automatically controlled from an attractively styled, centrally located panel that is factory wired and mounted on the unit.

Efficient capacity reduction from 100% down to 5% is made possible by pre-rotation vanes. This automatic, continuously variable control method, introduced by York, gears refrigeration capacity directly to air conditioning load.

Capacities from 65 tons refrigeration

## YORK Turbopak Water Chillers In Action At...

**OWENS-CORNING FIBERGLAS CORP., GRANVILLE, O.,** requires precise temperature-humidity control and clean, dust-free atmosphere for this research and testing facility. Two 200 horsepower York Hermetic Turbopaks do the job.

**ILLINOIS POWER CO., DECATUR, ILL.,** installed a 100 horsepower Turbopak for air conditioning their 2-story office building. Unit's compactness enabled location in space previously wasted. Expect to save 15% in maintenance.

**INSURANCE COMPANY OF NORTH AMERICA, RICHMOND, IND.,** makes use of a 125 horsepower York Hermetic Turbopak to air condition their modernized office building, greatly increasing the comfort and efficiency of the employees.

# New

# Plus

# New

## Complete YORK Line of Central-S

*EXACTLY MATCHED TO OTHER YORK EQU*

**Wide Line**—New fan-coil units from 800 to 36,000 cfm are design-matched to York cooling equipment to give a complete, balanced system. Units cool, heat, humidify, dehumidify, mix, filter and circulate the air for complete human comfort.

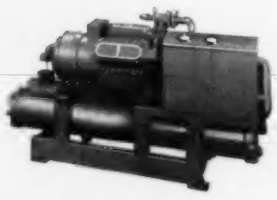
**Maximum Flexibility**—Modular construction gives design flexibility, cuts installation costs. Fan section rotates for air discharge in 3 directions. Coil section accommodates almost any combination of cooling, preheat and reheat coils.

**Long Life Built In**—Rigid frame angle construction completely galvanized for corrosion protection. Fans double-protected with epon coating baked over galvanized finish. Fan bearings permanently life-time lubricated for dependability.

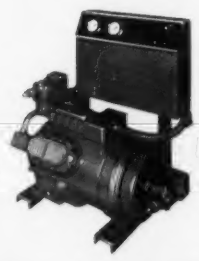
**Quiet Operation**—Evase connection between fan outlet and unit outlet insures maximum efficiency at lowest noise level. Fans have forward-curved blades for low speed, low outlet velocity operation to assure quietness. Panels sound-insulated.

Modular design of t
and installation fle
and either ceiling
includes a wide ch

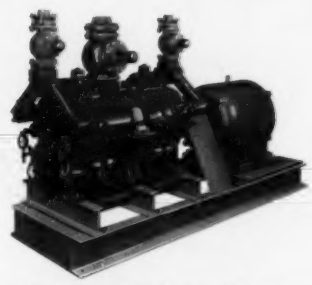
## Range of Equipment and Service f



**PACKAGED WATER CHILLERS.** Widest range of models, including a new dry-expansion line, to meet any application. Take 20% less floor space. 3 to 300 tons.



**HERMETIC COMPRESSORS.** Deliver more capacity per foot of installation space. Largest model takes only 7 sq. ft. of floor area. 10 to 45 tons refrigeration.



**V/W COMPRESSORS.** Halocarbon or Ammonia, up to 300 tons. Automatic unloading down to 25% capacity with power savings in almost direct proportion to load.

**HYDRALINE.** Attractive, semi
recessed fan-coil units and 3 to 1
ton factory packaged wate
chillers for hydronic heating an
air conditioning systems.

## Expanded YORK Line of Packaged

***FOR COMMERCIAL APPLICATIONS***

Embassy water-cooled models with step-capacity design cut operating costs up to 15%. Cool a room or a building. 3 to 33 tons.

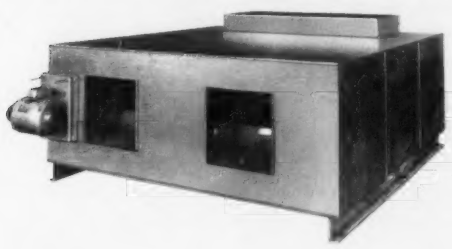
Champion air-cooled models eliminate costly water towers and connections. Install quickly and easily. 10 to 22½ tons capacity.

Heat Pumps heat and cool, have exclusive electric defrosting. Completely factory assembled and wired for fast installation.

Comfort Center heats and cools
humidifies and dehumidifies
purifies air electronically, all in on
compact, attractively styled uni

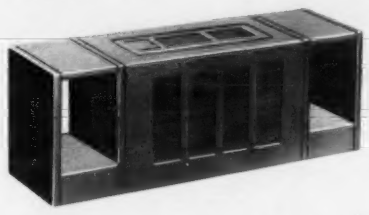
# -Station Air Conditioning Units

*EQUIPMENT TO GIVE YOU AN EFFICIENT, WELL-BALANCED SYSTEM*

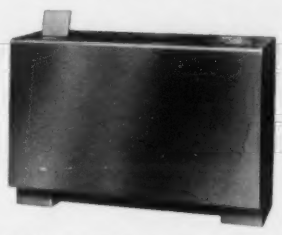


esign of this new line of York central fan-coil units provides unusual design lation flexibility. Unit sections can be arranged horizontally or vertically, r ceiling or floor mounted, to best utilize the space available. New line wide choice of accessory equipment to meet individual requirements.

***Plus*** **THESE ADVANCE DESIGN AIR HANDLING UNITS**



Hi-I Induction Air Conditioners in wall or floor models with 30 capacity sizes. High efficiency plenum and nozzle design improves air circulation, boosts capacity per cfm of primary air.



Fan-Coil Air Conditioners can supply year around heating and cooling without primary air equipment and ducts. Complete range of floor, wall and ceiling models for any application.

# e to Meet Your Specific Requirements

ive, semi- nd 3 to 15 ed water ating and .

**ECONOMIZERS.** Wide choice of evaporative condensers to save water and power. Sectional construction for installation ease and flexibility. Built to last.

**ICE-MAKING EQUIPMENT.** Saves cost of delivered ice, pays for itself. Automatic, factory packaged units with ice-making capacities from 100 lbs. to 12 tons.

*Fast Service from a Nationwide Network of*

## YORK PARTS DEPOTS

Strategically-located warehouses give fast, localized service on genuine York renewal parts, valves, fittings and oil. Helps minimize equipment downtime.

*Continuous Peak Performance of Your Air-Conditioning System Assured by*

## YORK Certified Maintenance

Covers regular inspections, emergency service, complete maintenance including parts and labor, changeover or start-up and shut-down for a nominal, agreed-on-in-advance fee.

# ed Air Conditioning

***FOR RESIDENTIAL APPLICATIONS***

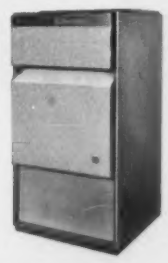
and cools, midifies, , all in one tyled unit.

Heat Pumps heat and cool electrically, eliminate chimneys and fuel handling. Self-contained unit installs almost anywhere.

Pathfinder self-contained air conditioners cool a whole house, need no water. Locate anywhere there is access to outside air.

"Add-On" air conditioning units bring cooling economically to warm air heating systems, or install as a separate system.

Room Air Conditioners deliver powerful-quiet cooling. Three beautifully styled series, including year-round heat pump models.



Gas or Oil fired furnaces have Silver "V" burners that deliver more heat, more economically. Complete range of types and sizes.

# Randall Directs M-H Advertising At Minneapolis

MINNEAPOLIS — Promotion of Dean B. Randall to director of advertising for Minneapolis-based divisions of Minneapolis-Honeywell and creation of two new positions in the firm's advertising department have been announced by H. D. Bissell, vice president.

D. B. Randall

R. Crouser

R. Ruff

Richard Crouser has been named advertising and sales promotion manager for the company's Residential Div. and Robert Ruff has assumed duties as advertising-sales promotion manager for its Commercial and International divisions.

"These appointments reflect the continued growth of the Minneapolis-based sales divisions which requires an increase in our advertising and sales promotion activities," Bissell said.

Randall, 39, formerly Minneapolis advertising manager, will coordinate all advertising activities and continue to be personally responsible for industrial control, semi-conductor, home product, military product, and corporate advertising.

Crouser, 32, joined Honeywell in 1952 and most recently has served as administrative assistant to K. L. Wilson, vice president of the Residential Div.

Ruff was formerly advertising manager of McCulloch Corp.'s Marine Products Div.

# *New York Apartment Seekers Want Air Conditioning, Builder Finds*

NEW YORK CITY — George Rosen, apartment house builder, said recently that growing recognition of the year-round value of tenant-controlled air conditioning has made it the most demanded facility in new apartment buildings.

Rosen noted that in addition to cooling, the modern air conditioner performs other comfort and health functions necessary at any season of the year.

He also cited the result of an informal survey of apartment seekers at the newly-completed Shoreham House in Flushing, Queens. He said the survey indicated that more than 85% were solely interested in buildings offering cooling facilities.

The air conditioned Shoreham suites range from two to 5½ rooms. Rentals start at $110 monthly, gas included, for two-room apartments.

## Ansul Opens Sales Office for Midwest

MARINETTE, Wis. — Ansul Chemical Co. has opened a new refrigeration sales office in Elmhurst, Ill.

The office is home base for men covering Iowa, Illinois, Indiana, Wisconsin, Minnesota, Montana, and the Dakotas.

Office personnel includes James L. Maurer, refrigeration manager; John K. Worthington, and Helen C. Graf.

## 11th Annual NWAHACA Short Course at Purdue March 14-17

LAFAYETTE, Ind.—The 11th annual Warm Air Heating and Cooling Short Course is to be conducted at Purdue university here March 14-17.

Objectives of the course are to impress dealers and employes with the advantages of the air distribution system, to inspire them to sell these features, and to train them to design systems for desirable air conditioning and distribution.

The course will also aid anyone who would like to meet the Silver Shield Standards as the design problems utilized here are also included in the Silver Shield Training Program, it was pointed out by the sponsors of the course.

## CCNY Offers Course In Air Conditioning

NEW YORK CITY—A series of special technical courses to be given in the spring term at The City College of New York includes courses in air conditioning, plumbing, food technology, and building construction, it was announced recently.

All courses will be given in the evening and will commence the week of Feb. 8. A free brochure is available from Prof. G. Donald Brandt, The City College, School of Technology, Civil Engineering Dept., Convent Ave. & 139th St., New York 31, N. Y.

**NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.**

PROVEN BEST!

FOR ALL MAKES OF ICE MACHINES

VAPCO

ICE MACHINE CLEANER

The ORIGINAL LIQUID Ice Machine Cleaner. Works fast yet safely. Produces FRESH SMELLING flakes and cubes.

No danger from toxic residues because it's FOOD GRADE. Simple and safe to use with ANY machine.

1. Goes into solution quickly — even in COLD water.
2. No undissolved crystals left.
3. Removes more scale per ounce of cleaner.

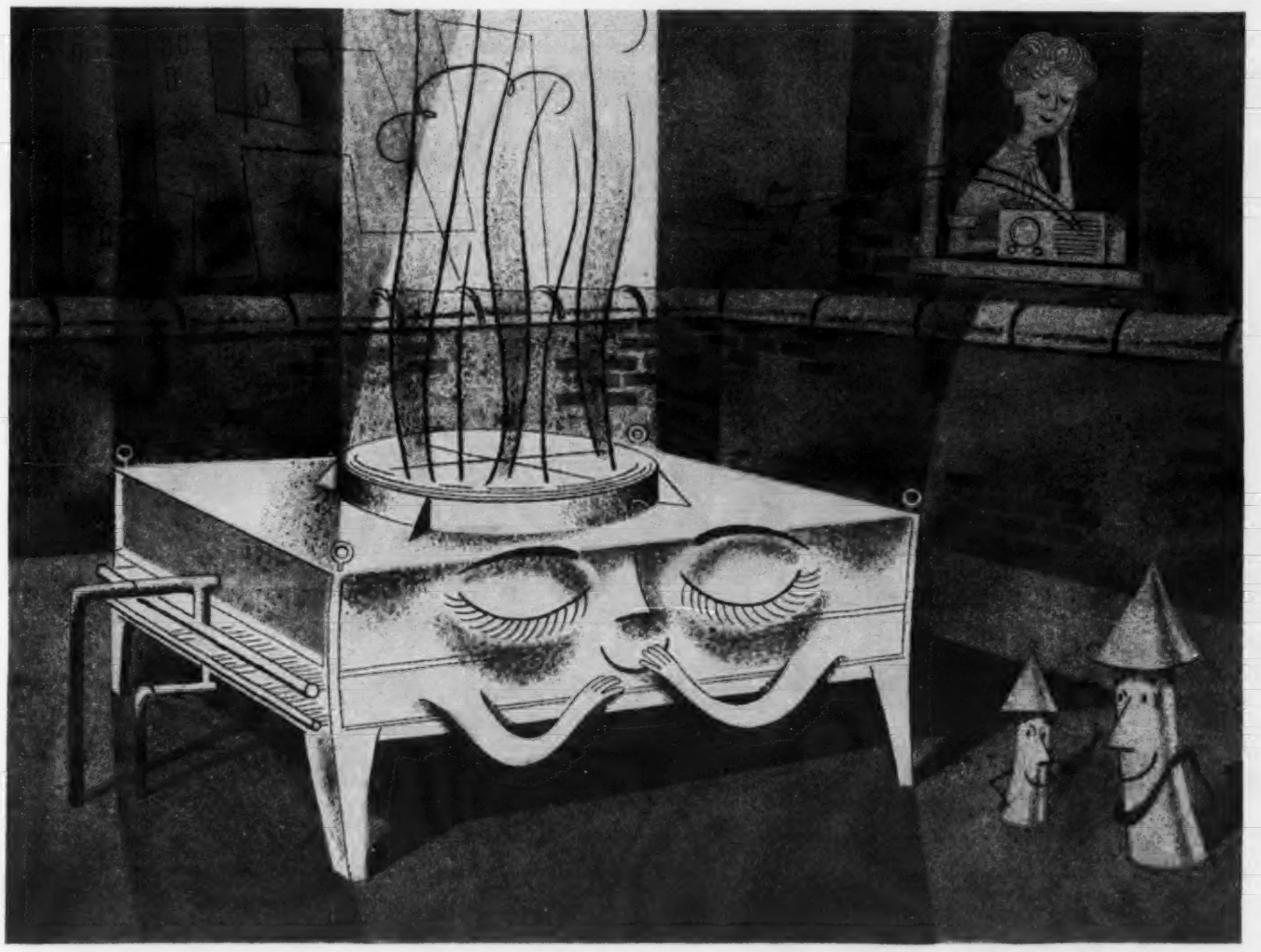
Now, in Safe, Mailable 8 oz. Plastic Bottles and 200 lb. Drums.

Vapco QUALITY PRODUCTS

Complete literature on request or see your dealer TODAY!

GARMAN COMPANY ST. LOUIS 25, MO.





# Ever hear of a bashful air-cooled condenser?

*Check the new Halstead & Mitchell vertical air flow condenser*

H&M's new ACV Air-Cooled Condenser with vertical air flow hates to be showy. It's so low and so quiet, you hardly know it's there—very appealing to owners, their neighbors, architects and engineers!

Roof loading is low, too, and air flow noise is directed away from surrounding structures. This delights building owners and tenants alike.

Vertical air flow models are available in 5 to 100 tons. And like all H&M Air-Cooled Condensers, the ACV series features exclusive Turbu-Flo fins, spaced wide to prevent clogging by air-borne dirt. Multiple circuiting is available for your specific needs *at no extra cost*.

Get the whole story on H&M Air-Cooled Condensers—with propeller or centrifugal fan. Ask your refrigeration wholesaler for a copy of the new bulletin AC-102. Or write to Halstead & Mitchell, Bessemer Bldg., Pittsburgh 22, Pa.

ACV SERIES — 5 TO 100 TONS

Halstead & Mitchell

Air-Cooled Condensers • Finned Coil Products • Water-Cooled Condensers • Cooling Towers

# Central Air Conditioning Reducing Cost Of Building School, Clary School Shows

## *Cost Per Cu. Ft. with Air Conditioning 94¢*

SYRACUSE, N. Y. — Construction contracts for the 750-pupil F. Ware Clary Junior High School have been cited as proof that school building costs can be reduced by using central air conditioning to permit a more economical architectural design.

The cost per cubic foot of the new school including its air conditioning plant will be only 94 cents, the lowest figure achieved here in recent years, according to the Syracuse Dept. of Engineering. It is, the department said, a "bargain."

In comparison, the cubic foot price was $1.09 for William Nottingham school and $1,38 for Syracuse Central Technical-Industrial school.

Over-all cost of central New York's first air conditioned school was set at $2,033,000. Without air conditioning and the more compact layout it allows, the investment in a school of this pupil capacity with conventional heating and ventilating would have been $2,087,000, the architects and engineers who worked out the new design have estimated.

"In addition," said Dr. Paul A. Miller, superintendent of Syracuse schools, "it offers the great advantages of permitting better teaching and learning and of being completely usable day or night in any season."

The Syracuse development is pioneering an approach to the reduction of school construction costs which is arousing the interest of school administrators everywhere, Charles V. Fenn, vice president of Carrier, stated. The air conditioning equipment contract was awarded to Carrier by Kenneth A. Taylor, Inc., Syracuse mechanical contractor.

"The Clary school will demonstrate that construction savings ranging as high as 10 to 15% in some areas can be achieved by designing around air conditioning," Fenn said.

"This benefit can be added to the obvious ones resulting from year-round introduction and cleansing of outdoor air with temperature, humidity, and circulation under control."

The developer of the plans, Murray Hueber of the local architectural firm of Pederson, Hueber, Hares & Glavin, said major savings in construction stem from the use of the compact rectangular buildings made possible by air conditioning.

Up to now, modern schoolhouse design has featured a number of long narrow classroom wings to obtain cross-ventilation and some relief from the excess heat generated by healthy youngsters, modern lighting, and the sun, it was stated.

The new school now under construction at Meachem Field will be in two simple rectangular sections connected by an enclosed passageway. One building will house 31 classrooms, and the other will contain vocational shops, an auditorium, gymnasium, cafeteria, and the administrative offices.

Hueber estimated that use of such a design rather than a group of classroom wings has reduced the length of foundation wall by 1,100 ft., the amount of masonry side wall above ground by 9,100 sq. ft., and of glass by 9,000 sq. ft.

In addition, less piping will be needed for storm drains, sanitary sewers, and domestic hot water. Power lines can be

## Air Conditioned Texas School To Cost $11 Per Sq. Ft.

SYRACUSE, N. Y. — Construction plans for two schools, one in the South and one in the North, were cited as proof that educational plants designed around air conditioning cost no more and can be even less expensive than those with conventional heating and ventilating systems.

A new 2,200-pupil junior-senior high school being built in Abilene, Texas is priced at $11 a square foot exclusive of land and furniture. F. Ware Clary Junior High School in Syracuse, N. Y. will cost $16 a square foot.

The figures in both cases include the investment in air conditioning equipment, and are equal to or below the average for non-air conditioned schools in the same geographic locations.

Charles V. Fenn, vice president of Carrier Corp. and general manager of its Machinery & Systems Div., said the findings signal a half in the upward trend of school construction expense. Carrier will supply air conditioning equipment for the two schools.

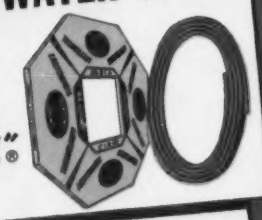
Abilene Junior-Senior High School, the city's third and largest air conditioned school, will resemble a college campus. There are to be nine separate buildings, all generally rectangular in shape.

They will include: academic (30 classrooms), science, fine arts, library, cafeteria, administration, shop, boys' gym and girls' gym. The first seven will be air conditioned year around. It will be possible to divert cooling to the boy's gym for evening events.

A 1,100-seat auditorium is planned for the near future.


IN TUBING, Nothing Beats Copper!
IN COPPER TUBING, Nothing Beats READING!

For COPPER WATER TUBE
Specify READING "LEKTRONEAL"®



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Specify READING "LEKTROSEAL"®

Also Specify READING
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- COMMERCIAL COPPER TUBE
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For FINNED COPPER TUBE
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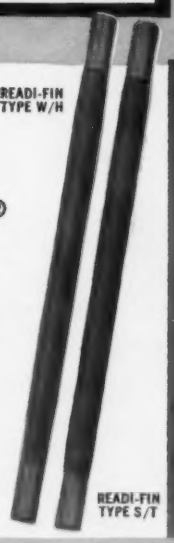
A line of heat transfer tubing made by Readi-Fin Mfg. Co., Inc. (a subsidiary of Reading Tube Corp., at Reading, Pa.). The extended surface is extruded from the tube wall, thus eliminating the possibility of fin failures resulting from thermal shock, corrosion and erosion. This "one-piece" (integral) construction provides maximum heat transfer efficiency, ruggedness, easy fabrication and freedom from fouling. It's available in Water Tube types with finned or plain ends and in Condenser Tube types with finned, plain or stripped ends.

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(A Subsidiary of READING TUBE CORP.)
PAWTUCKET, R. I.

- Famous for Accurate and Fine Finish Tubing
- Quality Controlled from Start to Finish

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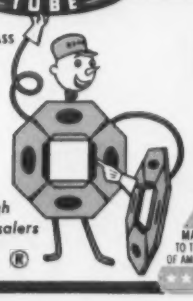
And RED BRASS PIPE



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AIR CONDITIONING MANUFACTURERS

*PLEASE NOTE*

Have *your* COMPRESSOR, COOLING CYCLE or HEAT PUMP rebuilt where quality of workmanship and faithful adherence to your specifications are backed by *certified know-how* and adequate test equipment. Warehousing available. Have your Area Service Engineer contact us for particulars.

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9751 Klingerman Street
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California

shortened and will be of lighter gauge.

Savings from these reportedly will amount to about $150,000 with no loss in floor area. The cost of the cooling equipment for the year-round air conditioning system is about $95,500. The net reduction in cost is therefore $54,5000.

The savings could have been even greater, Hueber said, except that cooling and heating equipment and pipe sizes to be installed are larger than the building presently requires. They have the capacity to handle an expansion in classroom area of 50% if future needs require it.

Hueber summed up the difference between the compact air conditioned structure and the type incorporating extended classroom wings:

"Economy is possible with compact construction, but compact constructions is not possible without air conditioning."

In addition to reduced construction cost, the new type of school building will offer greater operating economy. Dr. Miller estimated that filtering of outdoor air before it enters will cut cleaning and maintenance expense by about $4,000 a year.

Fenn pointed out that the total cost of both cooling and heating the school over a 9½-month period will be less than that of heating alone in a building of different design.

He explained that there is less wall area through which outside weather can affect indoor conditions than there would be in a school with "finger" wings.

Also, corridors just inside the exterior walls serve to insulate classrooms from extreme outdoor conditions and make it easier to maintain stable conditions.

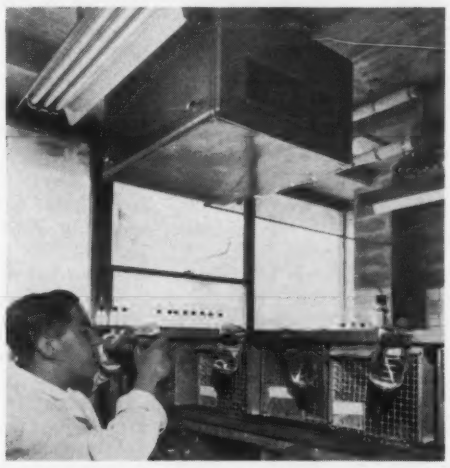
Significant as well to the future economics of the school system are these facts, Fenn said:

1. The school will not become obsolete. He predicted that most new schools will incorporate air conditioning within the fairly near future.

2. It can be operated year-round. Attendance at remedial and enrichment courses taught during the summer at schools across the nation is increasing annually.

**NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.**

## College Psychiatric Dept. Finds Air Conditioning Sensible



STUDENTS IN THE Psychiatric Dept. of the Albert Einstein College of Medicine in New York City are learning their profession in air conditioned comfort. (Above) a technician sets an EEG reading on a delicate instrument in the department which is served by a 10-ton Brunner condensing unit. (Right) a medical student feeds rodents in the seventh floor animal institute, held to correct temperature conditions by a Dunham-Bush comfort conditioner. Other Dunham-Bush products at Einstein college include pumps, air handling units, and individual room air conditioning units.

***Protecting Consumers***

## Air Conditioned Flies Help Test Fresh Fruit For Pesticide Traces

GENEVA, N. Y.—An elaborate procedure for testing fresh fruits and vegetables and products made from them for any harmful pesticide residues is provided in laboratories at Cornell's New York State Experiment Station here.

Here thousands of tiny fruit flies live out their lives in air conditioned quarters and play a most useful role in protecting consumers.

In a procedure known as a "bioassay," these test insects are used to detect minute traces of possible harmful residues for some of which there may be no available chemical test, according to the station.


Air Conditioning & Refrigeration FACTORY

**PROCESSING EQUIPMENT**

• Pressurized Tracer Gas Units • Portable Refrigerant Charging Stations • 5 Unit Rough Vacuum Stations • Precision Laboratory Chargers • Leak and Moisture Indicators • High Vacuum Pumps and Accessories

*. . . complete production line facilities engineered to your requirements.*

AIRSERCO MFG. COMPANY
435 Melwood Ave. • Pgh. 13, Pa.



# Electrowheel*

another LAU "first in the industry"

Here's another Lau first, designed to help solve those cramped space blower installation problems. The versatile Lau "Electrowheel" is recommended for use whenever air moving efficiency is a requirement but space limitations present a problem. The "Electrowheel" is extremely efficient when operating where the utmost in compactness and smooth, quiet operation is required.

Lau "Electrowheel" features include stationary rubber mounted shaft, sealed ball bearings, rigid one piece motor mounts, 30" motor leads with BX connector and the same high standard of quality found in every Lau engineered product. One moving part assures years of trouble-free service.

When an installation requires a high performance blower the Lau "Electrowheel" is the logical answer. Write for Lau Catalog LSO-463 for complete information.

*So named because a high quality external-rotor motor forms the wheel hub . . gives you more air delivery in a small package than ever before possible!

THE LAU BLOWER COMPANY, 2027 Home Avenue, Dayton 7, Ohio

LAU — World's Largest manufacturers of Air-Conditioning Blowers for: Warm Air Furnaces, Central Air Conditioning Systems, Evaporative Coolers, Cooling Towers, Remote Condensers

# Inside Dope

By GEORGE F. TAUBENECK

*(Continued from Page 1, Col. 1)*

by the mind alone over considerable distances. (Don't snicker; there's evidence that it's done in India by Yogi, and we don't mean Berra).

"We have had success," the professor reported in an undramatic understatement, "with the *mental moving* of objects not already in motion."

Dr. Rhine presented convincing evidence to support his belief that some dreams do come true, and that men of strong will can control the fall of dice.

In one phase of his studies, students in Duke's laboratory guess which card is drawn from a special pack of 25. These cards are designed with easily-visualized faces (star, square, circle, cross, and wave).

According to Dr. Rhine, some students' scores go about a million to one better than pure chance.

Occasionally the same odds prevail for control of the dancing dice by a few well-blessed individuals.

Dr. Rhine can rattle off considerable data about dreams, too. This includes foreknowledge of the fates of various Aunt Fannies, and clairvoyant dreams about a relative or friend who is in trouble.

One of his questioners at the Detroit meeting asked if Duke university had conducted any studies on dreams which did not come true. No reply.

Another query had to do with Dr. Rhine's statement that Einstein's theories might have resulted from "special knowledge" gained through ESP.

This questioner wanted to know whose brain sent out the impulse to inspire Einstein.

Again, no dice. But such questions undoubtedly will not deter Dr. Rhine from continuing his long study of things psychical.

This column, for one, is all for him.

No longer is it intellectually fashionable to be skeptical about *anything.* Faith sees the invisible, believes the incredible, and is rewarded with the impossible.

### *The Real McCoy About Castro, Etc.?*

Habana, Cuba

Editor:

Whatinhell! I feel as if I've known you personally these last nine years, through your weekly "Inside Dope."

You've been abroad, George, and maybe you view the rest of the world more in focus. . . . Don't the US know that Latin Americans have a built-in resistance to Communistic doctrines? . . . because 90% of all Latinos are raised in the Catholic Church? And Christianity and commies do not mix?

And that those waves of anti-US feelings that from time to time shock a bewildered US public are not directed against John Q. Public nor its cherished American institutions, but against the antics of the US State Department, which seems to be run by the leftovers from Martini Avenue? Foggy Bottom . . . how well named!

We have a saying in Spanish which goes: *No hay peor ciego que el que quire ver, ni peor sordo que el que no quiere oir.* . . . "There is no worse blind (man) than one who does not want to see, nor deafer than one that does not want to hear." . . . No further comment. . . .

What John Q. Public does not seem to realize is that "longhairs" are needed to guide a nation; not refurbished ward heelers and political appointees getting their reward for having made a sizeable contribution to the party kitty.

Don't U. S. voters know that the world is shocked every four years at election time, when they see from press dispatches that in the greatest democracy of the western world less than 50% of the electorate went to the polls?

Oh, well, neither you, nor Philip Wylie, nor me will change the situation overnight. . . . Regarding Cuba, my sincere advice is for you to come down for a look-see.

I read with gusto your article on Puerto Rico . . . but without malice toward any, Minnie Minoso was not born there. Orestes (Minnie Minoso) was born in the town of El Perico, Matanzas Province, Cuba, to its everlasting baseball glory.

Good double-header the other night . . . it lasted till 2 a.m. . . . but what wife would believe it?

Getting back to business . . . our business that is. . . .

Because the Baptista "exiles" left the Cuban till as bare as BB in "God Created Women," the Banco Nacional has placed rigid controls on all operations with foreign exchange which affect all electric household appliances in varying degrees.

Commercial refrigeration and air conditioning items have not been controlled and, therefore, that side of the coin is beginning to shine. As we can not live without *aire acondicionado,* even during the periodic chills that pass for winter down here, I'd say that air conditioning is the brightest star in the field for the time being.

Later on, coolers and refrigerators. I guess that winter down here is just an excuse for the girls to wear sweaters . . . love dem Sweaters . . . or perspirers?

I'm sure that by next summer refrigeration will be again top dog. Come down, George, and see for yourself—you won't regret it.

Times will not be easy for awhile, but another country was worse off in 1945, and right now seems to be the leader of Europe, this time by pacific means . . . of course, I mean West Germany.

The local counterrevolution is being fostered by old "patrician" families which can not seem to understand that their days of XX century feudalism are over for good, and would sell their souls to the devil if Satan would reinstate their privileges.

*(Concluded on Page 25, Col. 1)*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# WAGNER CAPACITOR-START MOTORS

**Pack more power into less space...give long troublefree service...are easy to hook up**

Here are general purpose single-phase motors that have high starting torque and high pull-in torque. When used in the proper application and supplied with voltage close to their rating, they'll give positive starts every time. Troublefree operation is assured . . . thanks to the positive action of the Wagner governor mechanism and long life quick-break switch.

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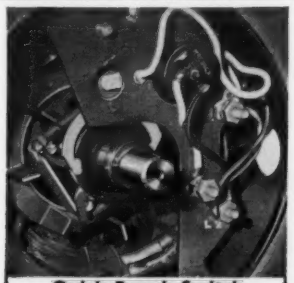

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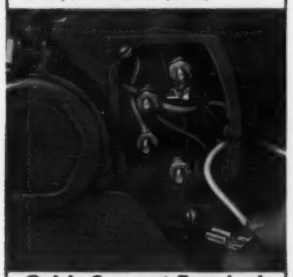

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**All-Angle Operation**

The sleeve bearing design, in fractional hp ratings, has a positive lubrication system that permits operation in any position . . . can mean important savings in motor costs to manufacturers.

**Wagner Electric Corporation**

6441 Plymouth Avenue, St. Louis 33, Missouri

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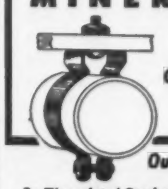

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Cable and Conduit

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Outserves! Outlasts!

In Zinc-plated Steel and Everdur. All sizes. Insulating bushings available. Top quality. Permit quick wiring. *Send for literature.*

MINERALLAC ELECTRIC COMPANY

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## Inside Dope

By GEORGE F. TAUBENECK

*(Concluded from Page 20, Col. 5)*

Remember?: Thirteen English Colonies once fought against other patricians and their cohorts . . . wonder what has happened to their will to fight for their ideas?

Money may seem to be tight, as it is concentrated mainly in the hands of those "patricians," but US-like income, business, inheritance, and property tax laws will put some of it back into circulation. Hell, the new Cuban income tax form seems to be U.S.A. Form 1040 literally translated!

Fortunately for Cuba, Castro has restored self-respect to workers, students, professionals, small businessmen, boys, girls—in other words, to 90% of the population—which is ready to die rather than bring back the black old days.

When and if you come down, skip the Country Club and Yacht Club set . . . visit the island, talk to the people, and enjoy yourself . . . you won't regret it. Then, when you talk to the prophets of doom, you'll see where the truth lies.

ANTONIO V. ALVARADO

## Heat Pump Featured In $3 Million Utility Center

MINEOLA, L. I., N. Y. — A feature of the office building at the new, $3,000,000 Brentwood Operations Center of Long Island Lighting Co. is the electric heat pump "which is one of the largest of its kind in this part of the country," according to a Lilco spokesman.

"Two water-to-air pumps, using well water, serve as the heating plant for the winter months and the cooling and air conditioning system for the warm weather," he said. "This installation, because of its size and unusual features, will be carefully observed by heating and air conditioning experts."

The office building contains 65,000 sq. ft. of space and includes a cafeteria seating 200 persons.

Heating, ventilating, and air conditioning contractor was James H. Martin of New York.

### New Cutler-Hammer Office

MILWAUKEE — Cutler-Hammer, Inc. announced that it has opened a branch sales office—its 63rd nationally—in Allentown, Pa. E. E. Crouthamel, formerly with the Philadelphia office, is manager.

**ENGINEERS M E or E E**

Product engineers and project engineers needed by rapidly growing manufacturer of automatic ice machines, camping equipment and room heaters and incinerators. If you are an engineer looking for growth opportunity . . . THIS IS IT! Excellent salary and fringes. Reply with resume to Personnel Manager, Queen Products Division, King-Seeley Corporation, Albert Lea, Minnesota.

## Short Form Aids Silencer Selection

NEW YORK CITY—The Air Conditioning Dept. of Industrial Acoustics Co., Inc. has introduced a "short form" which enables engineers and contractors "quickly and accurately to determine the type and number of silencing units required for any air handling system."

The form consists of a binder and pad of 25 reproducible work sheets. In working out the noise reduction requirements step-by-step on the short form, anyone can determine the exact size, model, and number of "packaged" unit silencers required for any particular system.

Copies of the short form are available from the Air Condi-

## Air Cleaning, Purification To Be Topic Of Building Research Meeting April 5-7

WASHINGTON, D. C.—A program on air cleaning and purification in buildings is among events scheduled for the 1960 spring conferences of the Building Research Institute to be held April 5-7 in the Statler-Hilton hotel in New York City.

John E. Haines, vice president, Minneapolis-Honeywell Regulator Co., is supervising development of the comprehensive program on air cleaning. This will include papers and panel discussions on filtration, odor control, and smog removal as well as reports on the application of research to the environment of space capsules.

Webster, Crenshaw & Folley, will be the general conference chairman. Architects, engineers, builders, product and materials manufacturers, educators, and research and technical specialists from all parts of the country will participate.

BRI, a member organization within the National Academy of Sciences-National Research Council, will hold its ninth annual meeting concurrently with the conferences.

Other conference sessions will embrace reports on college and university research projects, a program of BRI's Education Liaison Committee, headed by with James E. Lendrum of the University of Florida presiding. There will also be a plastics information workshop.

The BRI Building Operation and Maintenance Study Group has under way an extensive survey which will form the basis for its program at the conferences.

The conferences are open to the public as well as to BRI members and guests. Further information may be obtained from Milton C. Coon, Jr., BRI executive director, 2101 Constitution Ave., N.W., Washington 25, D. C.

**For Your Reprint Copy**

"Short, Short Course in Air Conditioning Fundamentals." By D. C. Schaffer. Mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort

*Air Conditioning, Heating & Refrigeration News,* January 18, 1960

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AIR CONDITIONING HEATING & REFRIGERATION NEWS

450 WEST FORT ST. DETROIT 26, MICH.

# Inside Dope

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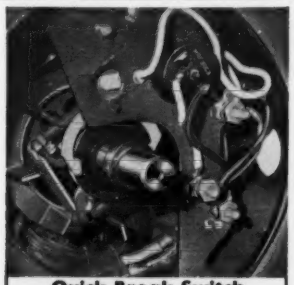

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**Wagner Electric Corporation**
6441 Plymouth Avenue, St. Louis 33, Missouri

WM60-2



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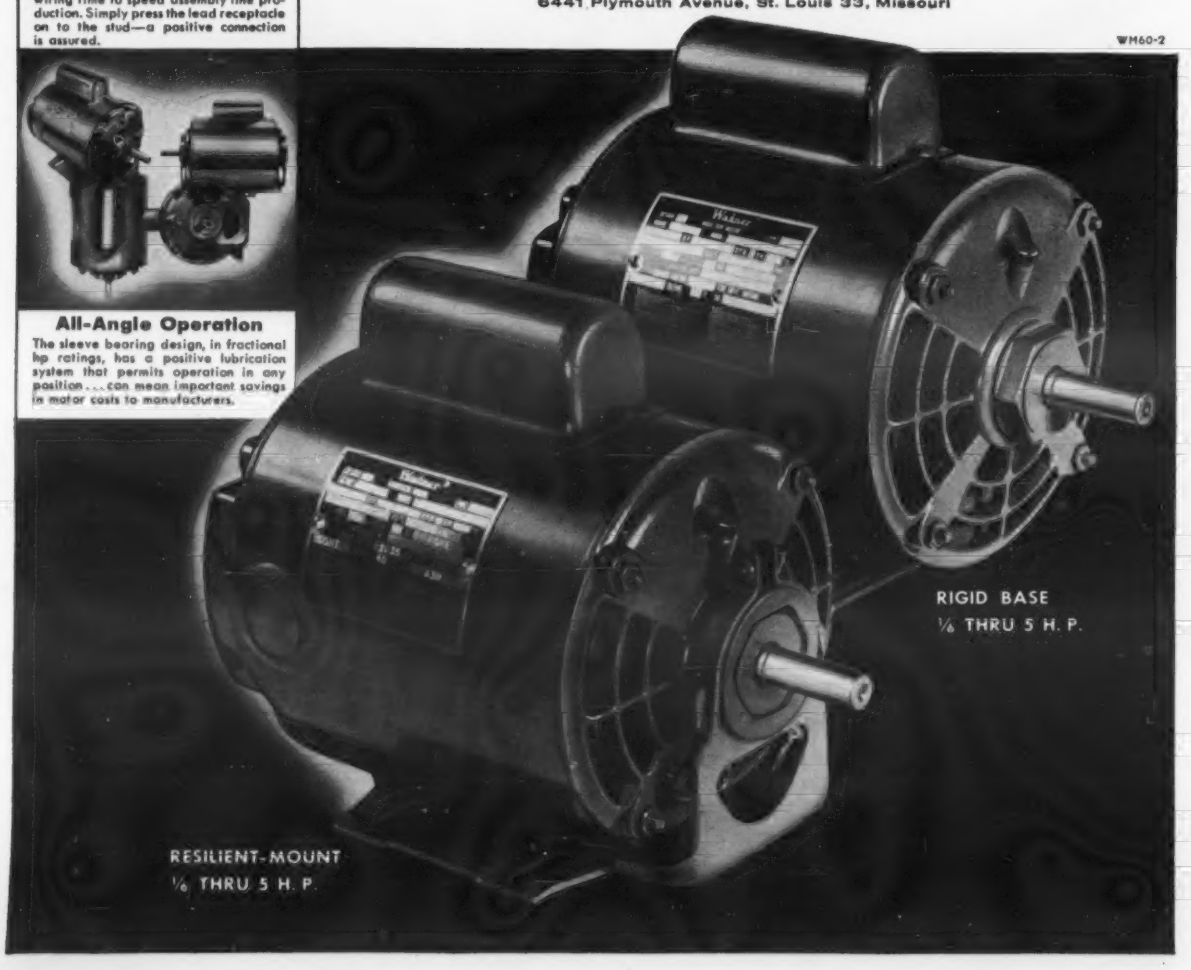


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This Diamond Jubilee product was especially designed to help you sell more year-round air conditioning systems. Honeywell's new Weather Station is a complete, precision instrument that's as reliable as it is attractive. It controls indoor comfort and checks outside weather conditions from a single, central location. The convenience of a clock, with its night setback feature, a barometer and humidity indicator also are provided. The panel also includes a warning light for clogged filter and other minor disorders, thus eliminating nuisance service calls.

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It eliminates nuisance service calls

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No more trips to the basement

Honeywell's new Weather Station is being pre-sold for you to your prime prospects beginning in the April issue of *Better Homes and Gardens* and continuing throughout 1960.

*air conditioning itself*

# NEW WEATHER STATION!

**Honeywell**

First in Control

SINCE 1885

## Inside Dope

By GEORGE F. TAUBENECK

*(Concluded from Page 20, Col. 5)*

Remember?: Thirteen English Colonies once fought against other patricians and their cohorts . . . wonder what has happened to their will to fight for their ideas?

Money may seem to be tight, as it is concentrated mainly in the hands of those "patricians," but US-like income, business, inheritance, and property tax laws will put some of it back into circulation. Hell, the new Cuban income tax form seems to be U.S.A. Form 1040 literally translated!

Fortunately for Cuba, Castro has restored self-respect to workers, students, professionals, small businessmen, boys, girls—in other words, to 90% of the population—which is ready to die rather than bring back the black old days.

When and if you come down, skip the Country Club and Yacht Club set . . . visit the island, talk to the people, and enjoy yourself . . . you won't regret it. Then, when you talk to the prophets of doom, you'll see where the truth lies.

ANTONIO V. ALVARADO

## Heat Pump Featured In $3 Million Utility Center

MINEOLA, L. I., N. Y. — A feature of the office building at the new, $3,000,000 Brentwood Operations Center of Long Island Lighting Co. is the electric heat pump "which is one of the largest of its kind in this part of the country," according to a Lilco spokesman.

"Two water-to-air pumps, using well water, serve as the heating plant for the winter months and the cooling and air conditioning system for the warm weather," he said. "This installation, because of its size and unusual features, will be carefully observed by heating and air conditioning experts."

The office building contains 65,000 sq. ft. of space and includes a cafeteria seating 200 persons.

Heating, ventilating, and air conditioning contractor was James H. Martin of New York.

### New Cutler-Hammer Office

MILWAUKEE — Cutler-Hammer, Inc. announced that it has opened a branch sales office—its 63rd nationally—in Allentown, Pa. E. E. Crouthamel, formerly with the Philadelphia office, is manager.

**ENGINEERS M E or E E**

Product engineers and project engineers needed by rapidly growing manufacturer of automatic ice machines, camping equipment and room heaters and incinerators. If you are an engineer looking for growth opportunity . . . THIS IS IT! Excellent salary and fringes. Reply with resume to Personnel Manager, Queen Products Division, King-Seeley Corporation, Albert Lea, Minnesota.

## Short Form Aids Silencer Selection

NEW YORK CITY—The Air Conditioning Dept. of Industrial Acoustics Co., Inc. has introduced a "short form" which enables engineers and contractors "quickly and accurately to determine the type and number of silencing units required for any air handling system."

The form consists of a binder and pad of 25 reproducible work sheets. In working out the noise reduction requirements step-by-step on the short form, anyone can determine the exact size, model, and number of "packaged" unit silencers required for any particular system.

Copies of the short form are available from the Air Conditioning Dept. of Industrial Acoustics Co., 341 Jackson Ave., New York City 54, for $1.

## Air Cleaning, Purification To Be Topic Of Building Research Meeting April 5-7

WASHINGTON, D. C.—A program on air cleaning and purification in buildings is among events scheduled for the 1960 spring conferences of the Building Research Institute to be held April 5-7 in the Statler-Hilton hotel in New York City.

John E. Haines, vice president, Minneapolis-Honeywell Regulator Co., is supervising development of the comprehensive program on air cleaning. This will include papers and panel discussions on filtration, odor control, and smog removal as well as reports on the application of research to the environment of space capsules.

Milo D. Folley of Syracuse, partner in the New York State architectural firm of Sargent, Webster, Crenshaw & Folley, will be the general conference chairman. Architects, engineers, builders, product and materials manufacturers, educators, and research and technical specialists from all parts of the country will participate.

BRI, a member organization within the National Academy of Sciences-National Research Council, will hold its ninth annual meeting concurrently with the conferences.

Other conference sessions will embrace reports on college and university research projects, a program of BRI's Education Liaison Committee, headed by Harold D. Hauf of Rensselaer Polytechnic Institute, and proposals for new building research with James E. Lendrum of the University of Florida presiding. There will also be a plastics information workshop.

The BRI Building Operation and Maintenance Study Group has under way an extensive survey which will form the basis for its program at the conferences.

The conferences are open to the public as well as to BRI members and guests. Further information may be obtained from Milton C. Coon, Jr., BRI executive director, 2101 Constitution Ave., N.W., Washington 25, D. C.

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# 4-Ton Heat Pump Can Be Cheaper Than 3 Over Long Run, Yeary Tells NWAHACA

ST. LOUIS — Despite its greater first cost, a larger heat pump may be cheaper to own and operate over a period of time than a smaller model for a given set of conditions, indicates Walter R. Yeary, supervisor of application engineering for General Electric Co.

In a discussion at the 46th annual convention of National Warm Air Heating & Air Conditioning Association here, Yeary showed that a 4-ton heat pump would be better than a 3-ton unit for identical residences located as far apart as Jackson, Miss., and Coloumbus, Ohio.

Design conditions for these two cities are about the same for summer (95° d.b. in both; 78° w.b. in Jackson, 76° w.b. in Columbus), but there is considerable difference in winter design conditions: 10 d.b. in Jackson, -10° d.b. in Columbus, Yeary pointed out.

For the house design selected, the Jackson loads were calculated at 34,000 B.t.u. in summer, 85,000 B.t.u. in winter; the Columbus loads figured at 33,600 B.t.u. for summer and 113,500 B.t.u. for winter, Yeary explained.

Obviously, a 3-ton unit should handle the cooling load satisfactorily in both Jackson and Columbus, but in both cities the 4-ton heat pump would cost less to operate for winter heating as well as summer cooling, according to Yeary's figures.

In Jackson at the winter design condition of 10° F., a 3-ton heat pump would need 20.7 kw. of supplemental resistance heat, but a 4-ton unit would need only 16.8 kw. supplemental heating at this temperature, he said.

"With the 4-ton unit there'd be a lower and better balance point," Yeary commented.

The excess cooling capacity of a 4-ton unit may present some problem with respect to completely satisfactory humidity control, especially in Jackson, but Yeary doesn't think the results would be "too bad."

Assuming a power rate of 1½ cents per kwh., the per season operating costs in the Jackson residence would compare as follows:

Heating—$204.38 for 3-ton unit; $151 for 4-ton heat pump unit.

Cooling—$119.80 for 3-ton; $95.46 for 4-ton.

With the same assumed rate and the 4-ton unit equipped with four 6.9 kw. supplemental resistance heaters, the per season operating costs in Columbus would be:

Heating—$580 for 3-ton; $474 for 4-ton.

Cooling—$67.71 for 3-ton; $53.94 for 4-ton.

Although the initial cost of the 4-ton unit is more than the 3-ton, this would be more than offset by the lower operating costs, so that over a period of several years the larger heat pump is actually less expensive to own and operate, Yeary declared.

Considerable thought must therefore be given, he implied, when selecting the size of heat pump to be recommended to a prospect.

R. A. Pierce

F. G. Lenzi

## Lennox Appoints Pierce, Lenzi

MARSHALLTOWN, Iowa — Lennox Industries, Inc. announced the appointments of Robert A. Pierce and F. Gordon Lenzi as general manager and sales manager, respectively, of the Lennox-Syracuse, N. Y. division.

Pierce, former sales manager of the Syracuse Div., fills the position vacated by the recent death of H. G. Krayenhof, former general manager. Prior to 1946, when he joined Lennox, Pierce was general manager of Palmer Plumbing Supply Co. of New England.

Lenzi has been associated with Lennox since 1946. He has served as New England Div. manager since 1951. He is a graduate engineer from the University of New Hampshire and has 22 years' experience in the heating and air conditioning field.

## *Research House Has Payne All-Gas Heating, Cooling*

LA PUENTE, Calif.—Southern California builders, architects, utility personnel, and homeowners are viewing the new Payne all-gas heating and air conditioning system installed at the 1959 Research House project located in the San Fernando Valley, The Payne Co. here announced.

The demonstration home is completely air conditioned with two new Payne remote type gas-fired air-cooled "Miracool" 3-ton units and two 100,000 B.t.u. "Imperial" counterflow forced air furnaces.

"The Payne gas-fired air conditioning units, the first of this type to be installed in Southern California are air-cooled absorption refrigerated type units which supply chilled water to the cooling coils," the company said.

"Although used with downflow forced air furnace units in the Research House installation, the Miracool gas-fired air conditioning unit can be adapted for use with companion upflow and horizontal forced air furnaces utilizing matching coils. The unit can also supply cooling along with a fan-coil blower unit."

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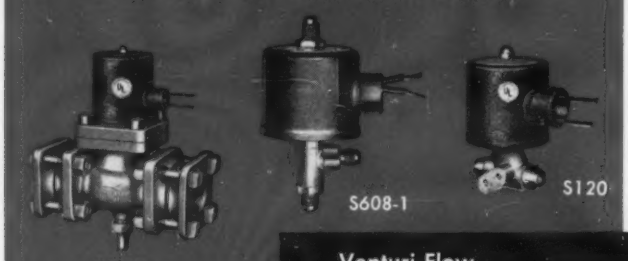


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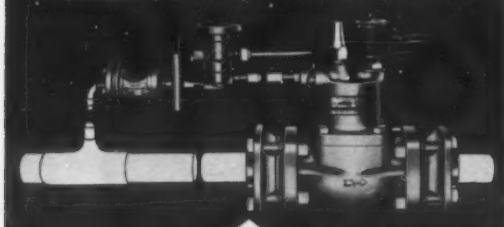

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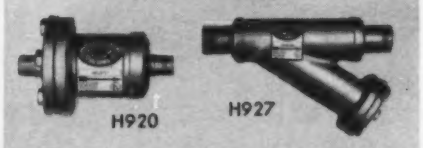


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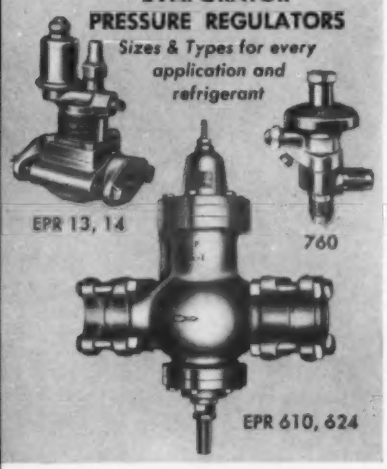


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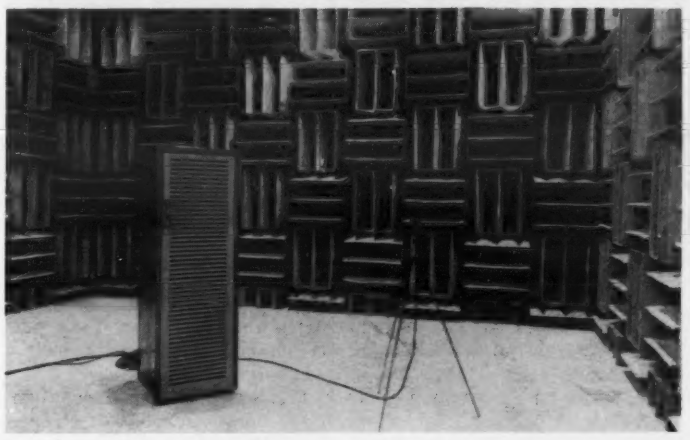
# Variable Static Pressure Across Air Impeller Possible With New Test Equipment In Torrington Test Laboratory

TORRINGTON, Conn. — An exceptionally large and well equipped sound testing laboratory has been completed by The Torrington Mfg. Co., producer of fans, blower wheels, and mixed-flow impellers, at its main plant here.

The company said that a unique air-moving system permits laboratory personnel to vary static air pressure in the test chamber so that the pressure differential across an impeller unit can be set at any level between 0 and 6 in. of water.

Designed jointly by the company's Air Impeller Div. and Bolt, Beranek & Newman, Inc., nationally known acoustic consultants, the Torrington Sound Laboratory includes a 22 by 23 by 16-ft. semi-anechoic test chamber, whose ceiling and three walls are covered with more than 600 sound-trapping glass-fiber wedges, and a separate control room for instrumentation and observation.



LEFT: NOISE OUTPUT of a blower in a commercial space heater is being measured in the semi-anechonic chamber of Torrington Mfg. Co.'s new sound laboratory in Torrington, Conn. The 600 glass-fiber wedges on three walls and the ceiling minimize the reflection of sound from these surfaces.

ABOVE: A TYPE H mixed-flow blower unit is being mounted in one of the two test frames between the control room and semi-anechoic chamber of the Torrington sound laboratory. Through the opening of the double acoustic doors, the sound pickup can be seen being adjusted for the test. Sound characteristics can be studied at static pressure differentials of from 0 to 6 in. of water across the blower unit in the wall by means of a unique air-moving system.

### Noise Elimination To Be Main Concern

The new laboratory will be concerned mainly with noise research in air-moving devices and the development of new and improved impellers. The sound test facilities and staff will also be assigned to special projects for manufacturers of air-moving equipment and appliances.

"The walls and roof of the Sound Laboratory, which is a separate building, are mounted on 2 in. of cork to provide vibration isolation down to 50 cps.," it was pointed out. "The concrete floor floats on a 6-in. layer of glass fiber insulation and does not touch the concrete base slab or walls at any point.

"Further acoustic isolation is provided by an 8-in. outer wall of dense sand-filled concrete block and a 12-in. wall of cement-filled concrete between the control room and test chamber.

"The test chamber is entered from the control room through double acoustic doors separated by a 7-in. air space.

"The semi-anechoic test chamber is designed so that the laboratory staff can conveniently simulate the actual mounting arrangements and ambient air conditions under which window and packaged air conditioners, space heaters, ventilators, and other air-moving equipment must operate in field installation.

"The isolation wall between the control room and test chamber contains, in addition to a double-glass observation port, two large openings for mounting test units.

"For example, window air conditioners may be installed in actual window sashes for sound tests."

The laboratory contains complete instrumentation for conducting any type of sound analysis, as well as an integrated system for sound recording and reproduction, according to Torrington. This facility is also being used for vibration analysis of impellers and air-moving units.

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Using a candle to test the quality of eggs is one thing . . . but to detect flaws in thin-walled copper tubing, Viking relies on the latest electronic equipment and scientific principles.
For example, every inch of straight-length tubing at Viking passes through a sensitive electronic "brain" built to Viking specifications.
This machine detects the tiniest pinhole, the minutest crack, bump or out-of-round.
If a defect is present the "brain" automatically marks the tubing and rejects it.
Hardness, temper, wall-thickness and other characteristics are also carefully controlled and tested on special equipment designed by Viking engineers.
Continuous re-orders from leading manufacturers of air conditioning and refrigeration equipment proves their awareness of this fact — that other brands "can't hold a candle" to Viking Copper Tube.
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# California RSES Circular To Membership Emphasizes Safety—Lists 10 Specific Recommendations

FRESNO, Calif. — A safety circular headed "This Could Happen To You" was mailed out to RSES members by publicity chairman Charles G. Bell with letters of invitation to the "Cal-Poly Work Shop" at San Luis Obispo Jan. 22-23.

In the circular Joe H. Gerdes of Santa Barbara, safety chairman for California Association, Refrigeration Service Engineers Society, brought to members attention two examples of refrigeration danger.

One was a motor-compressor brazed and tested at 300 p.s.i., which ripped open and killed a man. The object lesson is to always use approved methods of welding and testing such equipment.

The other was a near miss. A refrigerant cylinder which had been overfilled was placed in a truck 10 minutes before it exploded with a rip down the side of the cylinder. Object lesson: take time to weigh and pressure test cylinders.

### SAFETY POINTERS

This is what Joe Gerdes wrote under the heading: "Every Day Is Safety Day!"

1. Use extreme care in handling burned-out hermetics. Protect your eyes and hands. The oil and sludge can cause serious chemical burns if it comes in contact with your skin.

2. Refrigerant cylinder. Use up-to-date tested cylinders. Always weigh in refrigerant. Be positive it is not over filled. Protect the valve.

3. Be sure all electric power is disconnected to the unit being serviced when doing electrical fan and/or belt repairs and cleaning. Save your fingers and your life as well.

4. Use approved methods of pressure testing. Always use a regulator with nitrogen or carbon dioxide. *Never, never use oxygen.*

5. Be careful in the use of welding, soldering, or halide torches. Make sure hoses and connections are in good condition. Watch for combustible materials adjacent to work area.

6. Use ladders when required (not crates or boxes) placed in safe position and distance at the base (¼ of the height away from the wall).

7. Oily rags and units are a source of fires. Keep units clean and dispose of oily rags immediately in approved containers.

8. Electrical circuits. Protect with fuse or circuit breaker. Never wire around or use a penny. Overloaded circuits cause many fires. Ground portable electrical tools.

9. Careful use of cleaning solvents. Have well ventilated space. No open flames or smoking. Do *not* use carbon tetrachloride.

10. Purging refrigerants in enclosed space. Always provide ample air circulation. Take time to connect an exhaust fan or a purge hose.

Think safety, practice safety, today and everyday. Protect your life and property and that of others. There is no substitute for working the safe way.

REVERE

DRYSEAL

COPPER REFRIGERATION TUBE

Not one but two crimps are made in each end of DRYSEAL. This is the final step in manufacturing, that immediately follows a special cleaning and dehydrating operation, which keeps dirt and moisture from entering the tube.

The seal is made in such a way that the diameter of the tube does not change, which permits DRYSEAL to be passed through any opening large enough for the tube itself.

As for bendability—the soft temper of the copper used in DRYSEAL allows you to make the most intricate bends by hand. And its ductility and soft temper make it extremely easy to flare for compression fittings without danger of splitting. Economical tube sizes range from ⅛" to ¾" O.D.

Also you'll find the job-size, 50-foot one-coil pack easy to handle, light weight, economical.

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## Airtemp Appoints Stephan To Direct National Service

DAYTON—Vice president of sales, Joseph B. Ogden, has announced the appointment of Herbert G. Stephan as director of national service for the Airtemp Div. of Chrysler Corp.

Stephan has been with Airtemp since 1956, and last August was appointed National Service Dept. manager of field operations. He succeeds R. J. Thompson, who resigned.

Ogden said David M. Lile would succeed Stephan as manager of field operations and service parts.

Lile began at Airtemp in 1942 as a spot welder. He moved through a series of promotions and was made a general foreman in 1949, and last year was appointed parts manager.

## Allied Changes Brand Name of Anhydrous Ammonia

NEW YORK CITY — Allied Chemical Corp. has changed the brand name of its anhydrous ammonia from Barrett Brand to Allied Chemical Anhydrous Ammonia.

In announcing the change, a company official explained the designation "Barrett" originated with Allied Chemical's Barrett Div. which first produced and sold the product.

However, today Allied Chemical's Nitrogen Div. produces and sells anhydrous ammonia. The Allied Chemical logotype recently received official recognition as a trade-mark of the company.

## Acre Service Doubles Warehouse, Office Space

DALLAS—Acre Service, specializing in manufacturers' in-warranty hermetic system repairs of room air conditioners and commercial and residential air conditioning systems, has doubled its warehouse and office facilities in Brook Hollow Industrial District here.

G. M. DeJarlais, owner of Acre Service, announced that the company has occupied a new 25,000-sq. ft. building at 8400 Sovereign Row. Acre Service also occupies a 21,000-sq. ft. building at 9100 Ambassador Row in Brook Hollow. This location is the hermetic and compressor repair depot and local service branch.

## Sporlan Catalog Covers Ammonia System Controls

ST. LOUIS — A condensed catalog containing the complete line of controls it offers for ammonia systems is available from Sporlan Valve Co., 7525 Sussex Ave., St. Louis 17, Mo.

Detailed specifications, application, and construction data is included. Replacement parts kits for those thermostatic expansion valves and solenoids which can be serviced in the field are also tabulated for convenience in ordering.

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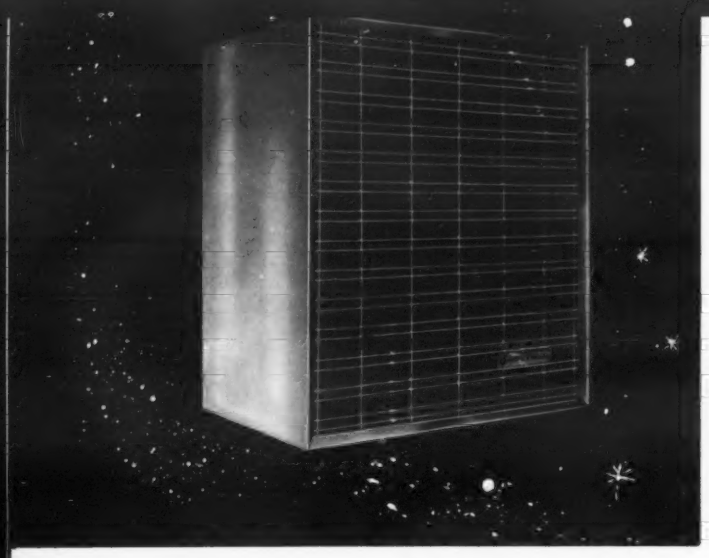

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Their clean, crisp "look" is a departure from the crude, cumber some industrial appearance of yesterday. Modern machine tools trucks and structures have evolved as attractive, functional designs And now, Janitrol sets the pace in unit heater styling!

The draft hood opening and adjustable louvers are concealed by the beautifully styled gold-tone grille. The rear combustion air inle permits use of a solid bottom panel . . . eliminates any possibility o obstruction to combustion air intake.

Inside, design progress is equally significant. Yet every part is proven . . . every safety feature is included. Result? Performance no other unit heater can duplicate.

Naturally, the "heating heart" of every new Janitrol is the famous Janitrol Multi-Thermex heat exchanger with this unchallenged record for durability and low maintenance: among nearly three million hea exchanger tubes produced since 1940, replacements for all causes have run less than ¼ of 1%.

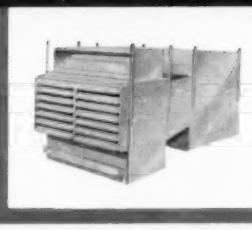
Investigate the many exclusive advantages of Janitrol 67 Series Unit Heaters for jobs you specify or install. Let them help build you reputation for quality.

### FEATURES THAT MAKE ALL OTHER UNIT HEATERS OLD-FASHIONED!

New "sheer look" styling—Beautiful Phoenix Beige finish • New gold-tone grille. Conceals louvers and draft hood opening • Low overall height • Automatic controls—Fully accessible • Factory-fired • Low Voltage Gas Controls—Standard • Low Voltage Sensitive Thermostat—Standard • Limit control—interrupts control circuits and shuts off fuel if unit temperature becomes excessive • Thermopilot Shut-off. Shuts off all gas, including pilot, in event of pilot flame failure • Automatic Pilot. Exclusive Janitrol low Btu. non-linting design • Quiet air delivery. Acceptable for schools and other applications where conventional units are too noisy • Motor prelubricated for 5 years • Built-in Draft Hood. Removable, provides full access to heat exchanger. Protects burners from abnormal up or down draft • Combustion air inlet. At bottom rear, through control enclosure. Controls constantly cooled by combustion air stream. Eliminates cross draft on burners • Ampli-Fire Ribbon Flame Burners. No flame contact on metal. Removable, with non-linting air shutters featuring thumb-screw adjustment.

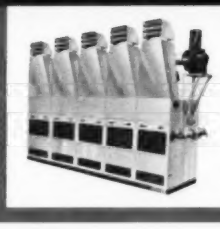
## MEET EVERY COMMERCIAL AND INDUSTRIAL HEATING NEED FROM JANITROL'S BROAD LINE

**GAS-FIRED DUCT-FURNACES**
Install in a duct where air is circulated by separate blower. Adaptable for use with cooling. Two sizes: 200,000 and 300,000 Btu/hr. input—may be combined to provide capacity from 200,000 Btu/hr. up, in increments of 100,000 Btu/hr. input. Six sizes, from 50,000 to 225,000 Btu/hr. in Duct 55 models.

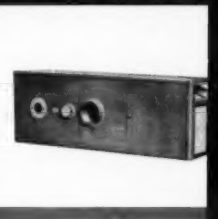


**BLOWER-TYPE UNIT HEATER**
Allows air delivery from greater heights and against greater static pressures. Models with exposed or enclosed blowers. A.G.A. approved as low and high static-type blower unit heater for air delivery to duct system up to 1.0 in. W.C. external static. Heat sections factory assembled. Sizes: 300,000, 400,000 and 500,000 Btu/hr. input.

**FLOOR-TYPE UNIT HEATER**
Cold air drawn from floor level is heated, filtered and discharged horizontally overhead. Quiet, clean, carefree—ideal for offices, restaurants, stores, labs, etc., requiring a compact unit.



**HEAVY DUTY BLOWER HEATERS**
For unit heating, central heating and air conditioning. Wide range of standard blowers and motors assures correct air delivery and temperature rise in each application. Factory assembled and tested. Capacities from 250,000 Btu to 1,750,000 Btu/hr. input.



**HORIZONTAL OIL UNIT HEATER**
For suspension overhead. Sav floor space. Compact, efficient, lo maintenance design clean and qu in operation. May also be used feed duct system. Choice of siz from 84,000 to 250,000 Btu/ output to meet all needs.

*helpful data for*
**ARCHITECTS, CONTRACTORS AND ENGINEERS**
*write collect today* for complete information on Janitrol units for heating with clean, economical gas in buildings of every type. There's no obligation.

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**HEATING AND AIR CONDITIONING**
**A Division of Midland-Ross Corporation**
Columbus 16, Ohio • In Canada: Moffats Ltd., Toronto 15

Also Makers of Surface Industrial Furnaces, Kathabar Humidif Conditioning, Janitrol Residential Heating and Cooling Equipment

# Underground Fire Alarm Center Finds Air Conditioning Important

ST. LOUIS—Because the new St. Louis Fire Alarm Center is located almost entirely underground as a safety precaution, air conditioning is vitally important.

The center, when activated this year, will intercept all fire alarms turned in from the city of St. Louis. Each alarm, whether received by phone or by fire alarm boxes, will then be promptly re-transmitted from the center to the proper fire station.

According to a report on the project, 1,172 miles of underground telephone and telegraph circuits link all fire stations to the center, enabling quicker response to all fire reports.

Eighteen inches of earth cover a 12-in. thick reinforced concrete roof. Only a southern wall is exposed and this would be barricaded in time of crisis.

"Thirty tons of air conditioning equipment was supplied by Curtis Mfg. Co. to perform the important task of supplying cool, clean air throughout the center," it was pointed out. "This insures ideal working conditions for personnel and proper functioning of all equipment.

"The air conditioning system re-circulates inside air or draws it from the outside of the building, depending on outside temperatures. Should the outside air become contaminated by dust or smoke resulting from an atomic explosion or other disaster, the air filter is automatically changed. This provides a constant source of filtered air.

"Two Curtis air conditioners are also utilized in this installation. One is used to pressurize cable containing the 1,172 miles of underground telephone and telegraph circuits, insuring protection from water seepage and foreign matter intrusion in the event of a mechanical break.

"This maintained pressure also serves to activate an automatic alarm and 'spotting' system if such a break occurs.

"The second air compressor is a standby for this underground pressurizing, and also supplies pressure for eight cleaning jets, built into the various parts of the building."

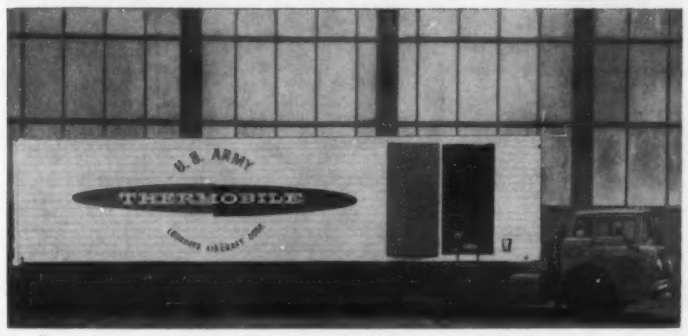
Architect is Hellmuth, Obata & Kassabaum; consulting engineering by John D. Falvey; mechanical contracting by Frigid Sales & Service Corp., all St. Louis firms.

**NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.**

## Cool Swift Branch Plant

LITTLE ROCK, Ark. — Swift & Co.'s new branch plant here is cooled and heated with Chrysler Airtemp equipment furnished and installed by Paul Allen Refrigeration Co., 1107 Main St.

# Missile Pre-Conditioner Temperatures Range from -50 to 150°




ARMY's NEW "Thermobile" pre-conditions solid propellent missiles under conditions that can be varied for -50° F. to 150° F. to aid in calibration of missiles for use in temperatures ranging from Arctic to Equator.

* * *

WEST HARTFORD, Conn.—The Army's new "Thermobile," a mobile chamber designed and built by Lockheed Aircraft Corp. to pre-condition solid propellent missiles, achieves vital temperature control through Dunham-Bush compressors, evaporator coil, air-cooled condenser, heat interchangers, receivers, and evaporative-condenser.

Large enough to accommodate a 28-ft. missile, the Thermobile can drop the temperature to -50° F. for a rocket motor stored inside, while the outside temperature is a torrid 110°, it was reported.

On the other hand, it can raise the temperature of a rocket motor to 150°, while the outside temperature is -10° F.

Thus, the test missile can be calibrated so missiles can be used more accurately in temperatures ranging from Arctic to Equator.

The refrigeration equipment in the Thermobile occupies the area of the trailer directly behind the cab. This compartment is insulated from the conditioned area.

The system is of the cascade type and uses Refrigerant-12 and Refrigerant-22. Two Brunner R5002 compressors and one EF 500 M5 (5 hp.), and one E750M5 (7½ hp.) compressor units are the integral parts of the low-side equipment.

A Heat-X inner-fin chiller is used in the evaporator-condenser portion. A BC 1000 (10 ton) air-cooled blower condenser is mounted in the machine compartment.

Heat-X heavy duty heat interchangers and "OSM" oil separator-mufflers are used in the system.

Shafts extend from the machine compartment through the insulated wall into the conditioned area where they drive the fans in the special evaporator coils.

Electric heaters are used for defrosting the finned coil and also as the heat source when system is run on heat cycle.

## To Air Condition New Moore Products $1,500,000 Plant

PHILADELPHIA—Sale of a 103-acre tract in Lower Gwynedd Township as the site of a new $1,500,000 air conditioned plant and headquarters for Moore Products Co. was announced by Frank G. Binswanger, Inc., national industrial realtor.

Moore Products, which has been located at H. & Lycoming Sts., Philadelphia, since 1940, is engaged in the development, manufacture, and sale of industrial instruments and pneumatic comparator gages.

A prominent feature of the new building, according to present plans, will be a heat pump installation.

The building will consist of a one-story manufacturing area of 72,000 sq. ft. and a two-story office wing of 48,000 sq. ft., it was pointed out.

DISTRIBUTOR DAN
AND
THE CASE OF THE
H-6 LEAK
DETECTOR
WHERE & HOW TO USE THE H-6?
G. E.'s NEW LOW COST H-6 IS DESIGNED ESPECIALLY FOR YOU, AND IT'S SIMPLE TO OPERATE-LOOK HOW EASY IT IS TO USE.
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THEN, TURN THIS KNOB TO 'MAXIMUM' AND ALLOW A MINUTE FOR THE UNIT TO WARM UP.
NEXT, FOLLOW THE EASY STEPS GIVEN IN THE INSTRUCTION BOOK TO ADJUST THE LEAK DETECTOR FOR PROPER SENSITIVITY.
INSTRUCTIONS GEJ-3584
TYPE H-6 LEAK DETECTION
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"ALL OF THIS ONLY TAKES A FEW MINUTES. NOW YOU'RE READY TO PROBE AT ABOUT AN INCH A SECOND IN AREAS WHERE YOU SUSPECT LEAKS."
THAT'S FAST!
THERE'S YOUR LEAK--PINPOINTED QUICKLY, POSITIVELY...
...AND IT REALLY IS EASY TO USE!
Watch for more tips from Distributor Dan and...
FOR MORE COMPLETE INFORMATION ON THE TYPE H-6 LEAK DETECTOR, CONTACT YOUR NEAREST AIR CONDITIONING AND REFRIGERATION WHOLESALER: OR SEND THIS COUPON TODAY FOR BULLETIN GEA-6827, TO GENERAL ELECTRIC COMPANY SECTION 595-406 SCHENECTADY 5, N.Y.
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NAME
ADDRESS
COMPANY
STATE
INSTRUMENT DEPARTMENT
GENERAL ELECTRIC

**They'll Do It Every Time**

by

Jimmy Hatlo

LAST SUMMER, SNODGRASS, THE SNOW-SHOVEL SALESMAN, CAME AROUND.. BUT POP STILLSON WOULDN'T GIVE HIM A CIVIL WORD, LET ALONE AN ORDER....
IT'S OUR NEW VIBRO-MELTER SNOW SHOVEL.. BETTER STOCK UP... IT WON'T BE LONG TILL WINTER ROLLS AROUND...
SNOW SHOVELS?! ARE YOU CRAZY? QUIT BUGGIN' ME!! I GOT ENOUGH TROUBLE JUST KEEPING COOL! I'M OVERSTOCKED WITH EVERYTHING....
SO COMES IT THE FIRST SNOW-STORM....
THANK AND A HATLO HAT TIP TO FRANK R. RUBBA, 106 BELLEVUE AVE., HAMMONTON, N.J.
HEY! GOT A VIBRO SNOW SHOVEL?
I WANT ONE OF THEM SNOW SHOVELS MELTS THE ICE AS IT DIGS IN...
YEAH... A VIBRO-MELTER, THAT'S WHAT I CAME IN FOR...
SNODGRASS! WHERE HAVE YOU BEEN? DON'T YOU WANT MY BUSINESS ANY MORE? LOOK... I WANT TO ORDER A GROSS OF VIBRO-MELTER SHOVELS.. GOT TO HAVE 'EM TODAY!!
2-22
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# The Sun Will Play an Important Role in Heating's Future

IS ENOUGH sunlight concentrated on the roof of a typical American home to meet all family heating and electrical needs—assuming our scientists can translate solar power into housepower economically in the near future?

Let's see: Judging by measurements of average sunfall in the midwestern U.S.A. Temperate Zone, approximately 580 Kw-hr of solar heat energy whangs daily on a typical house roof. At lowest estimate, five per cent of that solar power can be converted into electricity with present methods. At best, 30 per cent.

***Thereupon, we can figure,*** a solar-powered house should generate from 30 to 150 Kw-hr of power daily when fully equipped with roof collectors. Said kilowatts (on the long side) add up to considerably more than the power consumption of the average American home nowadays.

Good deal? Who can argue, unless a gang of brutal facts we don't know about currently arise some time later to smite a beautiful theory?

If world consumption of coal, oil, and natural gas continues to double every 25 to 30 years from now on, as seems reasonable, reserves of these conventional fuels will be exhausted before our grandchildren grow up and start having grandchildren themselves.

Hydroelectric, tidal, and atomic power may supply only a trifling fraction of the world's zooming electrical power need in the meantime.

***We hope that atomic energy*** may become a substitute for oil and gas—but we don't know yet how much of our future power needs can be met from fission or fusion. Presently known reserves of uranium may suffice for domestic power needs several decades beyond the exhaustion of our fossil fuel supplies, some predict, but they won't last forever.

What then? Well, basic technology now exists for the translation of sunrays into heat and electricity.

Conversion of solar energy directly to electricity (through photosynthesis) isn't completely understood, of course, but imaginative engineer friends of ours tell us it's probable eventually.

Solar energy which pours upon the earth's surface every four days equals America's entire reserve of fossil fuels (coal, oil, gas) *in potentiality.* This solar source of electricity is distributed over a broad spectrum ranging from the visible to the infrared—*and is yet to be tapped commercially.*

***That fact challenges*** the imagination of our industry's engineers.

Solar radiation's super-abundance eliminates the Presbyterian or Calvinistic urge to conserve everything. And its potential efficiency is important equally to thrifty Methodists or happy Catholics—because it will engender lower costs.

In that connection, successful utilization of solar energy will entail minimum capital investment—and that fact should arouse the interest of everybody, even the infidels and atheists to whom "capital" is a dirty word.

Solar and nuclear power differ basically. Here's why: Nuclear power costs tend to decrease as the plant size increases. Solar power, *vice versa.* Thus, nuclear and solar power could serve different markets for awhile, and their simultaneous development wouldn't necessarily bring them into competition.

***In attempting to capture*** solar power our physicists have made small inroads in two areas: heating devices and photosynthesis.

Examples of sunpower heating include solar stills, solar furnaces, solar water heaters and cookers, and radiation concentrators.

Currently laboratory physisists are generating electricity from solar energy by heating steam to drive a turbine-generator, and by energizing thermocouples to produce direct current.

Both methods have serious limitations, however—stemming from their low-duty cycles (maximum of eight hours of sunshine per day) and low efficiency induced by back-radiation from the collector.

***Photosynthesis*** (the method by which cholorophyll turns sunshine into food and power) constitutes the most complex—yet most intriguing—process involving sunlight power. Its economically practical application still eludes scientists everywhere, but they're trying eagerly to harness it.

Substantial progress in this field was predicted by no less a person than the late Charles Kettering (retired Vice President in Charge of Research for General Motors Corp.) who earmarked a substantial portion of his multimillion dollar fortune for the eager pursuit and development of photosynthesis.

Great days are coming! *Sunny* days!

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AIR CONDITIONING HEATING & REFRIGERATION NEWS

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*'The Conscience of the Industry'*

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## OFF THE CHEST

### SWISS READER CALLS PREDICTIONS ON USE OF ELECTRIC HEAT TOO OPTIMISTIC

General Motors Suisse S. A.
Bienne, Switzerland

Editor:

In AIR CONDITIONING, HEATING & REFRIGERATION NEWS, Mr. Irwin B. Nelson warns the New England plumbing and heating wholesalers to start selling electric heating or lose a substantial part of their business.

We do not doubt that Mr. Nelson has carefully studied this problem, but we still have some reasons to believe that his prediction on the use of electric energy for heating purposes is somewhat too optimistic.

Mr. Nelson states in his article that through the use of atomic power and conventional power plants financed through long-term government loans, the cost of electric energy could be brought down to 1¼ cents per Kilowatthour.

At the present time in Switzerland electric power for heating purposes is sold at a price below 1¼ cents per Kwh. but still cannot compete with other kinds of fuel. Oil, for example, which has to be imported either from the Near East or America is cheaper than electric power.

America, therefore, where oil is found right in the "backyard" will certainly not have to fear the competition of electricity as a heat source, even when the higher installation cost of any conventional heating system is taken into consideration.

We were certainly much intertested in reading Mr. Irwin B. Nelson's article, and would still be more pleased if the writer's predictions would come true, since, no doubt nobody would benefit more from a competitive electric heating systems, than Switzerland with electricity as its native source of energy.

G. E. CASSERINI, Mgr.,
Frigidaire & HH-Appliances

**NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.**

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# Fedders Licenses Rheem Affiliate In Milan, Italy

MASPETH, N. Y. — Fedders Corp. has licensed an Italian affiliate of Rheem Mfg. Co. to manufacture the Fedders line of air conditioners, it was announced recently by Salvatore Giordano, president and chairman of Fedders and A. Lightfoot Walker, president of Rheem and Rheem Safim, Milan, Italy.

Production is expected to begin by June, 1960.

"This will introduce the manufacture of American brand air conditioners in Italy," Giordano said.

Fedders also has licensing agreements with firms in India, Canada, and Brazil.

"The growing market for air conditioning in Italy has encouraged us to make this welcome addition to the Rheem Safim product line," Walker said. "The Fedders line of air conditioners will be introduced at the Milan Trade Fair in April."

Rheem Safim will market the air conditioners through its 24 sales offices in Italy including branch offices in Milan, Genoa, Padua, Rome, and Turin, according to Commendatore Francesco Bonelli, vice president of Rheem Safim and president and founder of Safim (Societa per Azioni Fusti e Imballaggi Metallici); Milan. Bonelli recently visited the United States to complete negotiations in the licensing agreement with Fedders.

Rheem Safim was formed jointly by Rheem and Safim in May, 1958. It manufactures steel shipping containers, water heaters. and highway rail guards under license from Rheem as well as kitchen cabinets, steel construction angles, and concrete forms. Rheem and Safim each have a 50% interest in the company.

# Admiral Promotes James R. Oberly

CHICAGO—James R. Oberly has been promoted to the dual position of vice president-international operations, Admiral Corp. and subsidiary companies.

He was formerly vice president-appliances and president of the international corporation.

Vincent Barreca, executive vice president, explained that the expansion of Admiral's overseas sales and manufacturing operations now requires the full time assignment of a line executive from the parent company.

B. H. Melton, formerly national sales manager of Admiral's appliance division, succeeds Oberly as vice president-appliance division.

Later, Oberly announced the promotion of Norman E. Johnson from vice president to president of Admiral International Corp. and Admiral Corp., Interamericana.

Johnson joined Admiral's legal staff in 1952 and was appointed associate general counsel three years later. He became vice president-foreign operations in 1956.

# *Foreign Sales Engineers Study At CC Factory*

SCHILLER PARK, Ill.—Ten new foreign sales application engineers of Controls Co. of America—appointed to strengthen application engineering service for appliance manufacturers in the European Common Market and Canada, and thus help build over-all company sales—arrived in Chicago recently to begin an intensive two-month study of the firm's products as they are applied outside this country.

Eight of the ten engineers are employed by Controls A.G., a CC subsidiary in Zug, Switzerland. A base company for the firm's foreign operations, Controls A.G. provides technical services — application engineering being one — to European manufacturers. The two Canadian sales representatives are employed by Controls Co. of America (Canada) Ltd.

ON A PLANT TOUR at Controls Co. of America, Schiller Park, Ill., are eight new CC sales application engineers who work in Europe. Shown with three of their guides examining an assembly operation, they are, left to right—H. Michoulier, France; G. Anderson, Schiller Park; R. Blasuw, Holland; O. Hill, Schiller Park; C. Pijpers, Holland; A. Piot and H. Schmid, Switzerland; E. Ess, Germany; D. Gustavii, Schiller Park; J. Cools, Holland; and I. Thomas, Germany.

The Schiller Park firm maintains manufacturing and sales facilities in Europe, Canada, and South America, in addition to its facilities in 17 locations across the United States.

Louis Putze, president, pointed out that when the new men complete their training and return to Europe and Canada, they will be empowered to aid in the establishment of authorized foreign service stations for Controls Co. products, in addition to providing application enginnering service to manufacturers.

**NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.**

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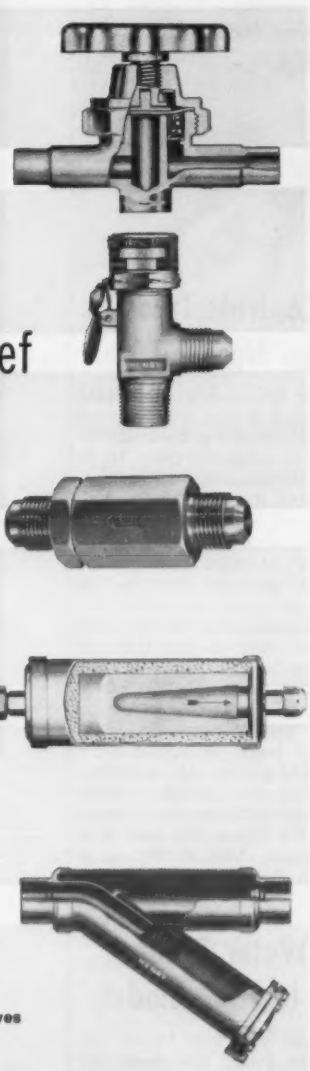
CONTROLLING FLOW SINCE 1914

Every product bearing the name Henry carries with it complete assurance of on-the-job satisfaction. This quality of performance and the confidence it inspires have made Henry the most accepted line in the industry. For Commercial Refrigeration and Air Conditioning Systems Using Refrigerants 12, 22 and Ammonia.



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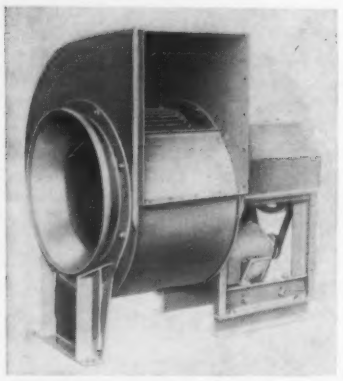


## Clarage Belt Driven Fan Set Ready To Run

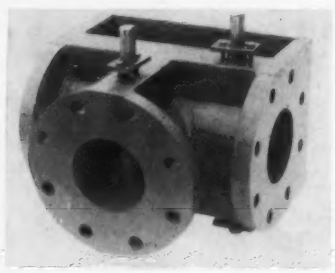
● A new line of V-belt driven "Ready Unit" fan sets has been announced by Clarage Fan Co., Dept. AH&RN, Kalamazoo, Mich.

These ready-to-run units are furnished complete with motor and drive integrated in one assembly. They are suited to supply or exhaust jobs—indoors or outdoors—for volumes to 25,000 c.f.m., static pressures through 2½ in., and temperatures to 300° F., the company said.

Type LS Ready Units have low speed, forward curved multiblade wheels and are offered in 13 sizes. Type MS units have medium speed backward inclined blade wheels and are available in 12 sizes.

**Want More Details?**

*ADDITIONAL details on products that are described on these pages may be obtained by writing the manufacturer at the address given in each What's New story.*



## Valve Controls Two Streams from 1 Pipe

● A new two-in-one valve said to do the work of two conventional butterfly valves and a flanged "T" connection is available from U. S. Valve & Engineering Co., Dept. AH&RN, P.O. Box 14015, Houston, Texas.

It controls flow in cooling water systems and in other applications where two streams flow to or from a single pipe.

Shaft packing may be removed from either end of the through shaft, inspected, replaced, or adjusted without removing the valve.

The triangle valve is a single unit—two butterfly valves in a flanged "T" body. It comes with either metal-seated or positive-sealing, neoprene-seated valves. Bodies are manufactured to dimensions of ASA Class 125 cast iron flanged fittings, ASA B 16a. It is available in sizes 1 in. through 12 in.

## Tuthill Water Pump Made In Four Models

● Addition of a new model "T" series water pump has been announced by Tuthill Pump Co., Dept. AH&RN, 939 East 95th St., Chicago 19. Provided in four different models, the pump is rated for capacities from 35 to 95 g.p.h. at 100 p.s.i. differential, with rated speed of 1,725 r.p.m.

## Lowboy Furnace Has High Style Front

● For installations where overhead clearance is limited, or in basements or rooms where appearance is important, the new "Rheemglas" lowboy gas furnace was developed by the Home Products Div., Rheem Mfg. Co., Dept. AH&RN, 7600 South Kedzie Ave., Chicago 52.

Available in four sizes, from 100,000 to 160,000 B.t.u. input, the furnace has "high-style" front panels, featuring two tones of blue with contrasting trim of embossed gold.

"The Rheemglas feature in the new Rheem furnace line applies to the combustion chamber and heat exchangers," it was explained by the manufacturer.

"The flame shaped combustion chamber, contoured to fit the natural flame pattern from gas furners, and the large continuous-welded heat exchangers are coated inside and out with Rheemglas for two basic reasons:

"First, Rheemglas finish on these metal parts, subjected to the gas flame and flue gases, provides an unusually long-lasting surface and eliminates the usual problem of corrosion; second, on the outside of the combustion chamber and heat exchangers, Rheemglas provides a highly permanent, smooth surface unusually impervious to moisture in the air, that could be the cause of rust and corrosion."

A plenum, for the addition of "Rheemaire" central summer air conditioning, can be installed with the furnace, so that summer air conditioning can be added whenever the homeowner wishes. The entire line of Rheemglas furnaces is specially designed to accommodate summer air conditioning, it was noted.

An external summer fan switch will permit blower operation during months when heat is not needed.

Permanent filters, needing only a rinsing in cold water to remove the collected dust and foreign matter, are another feature in the Rheemglas lowboy, it was indicated.


# now 13 leading air conditioner and forced air new sales feature in their 1960 models . . .

➤➤➤➤ ***These amazing filters kill clean . . .***

Industrial Division
FRAM permachem treated Air Filters will be available in 1960 central station air conditioners.

TRANE
FRAM permachem treated Air Filters will be available in 1960 models of Unit Ventilators, furnaces, UniTrane, Packaged Air Conditioners and Central Station Units.

Gibson
FRAM permachem treated Air Filters will be original equipment in all 1960 room air conditioners.

Cole
Furn
FRAM p
treated Ai
be original
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WESTINGHOUSE SUPREME dehumidifier for 1960 will remove up to 33 pints of water a day from an enclosed area of up to 16,000 sq. ft. It has 352 sq. in. of condensing surface on evaporator coil exposed at rear. Spring loaded casters prevent rattling when unit is operated on uneven floors. A second model, the De-luxe, is designed to remove 23 pints a day from enclosed areas up to 10,000 sq. ft. It is also caster mounted.

## Meter Surveys Noise In 75-140 Decibel Range

● A noise survey meter designed to measure noise hazard and to function as a monitoring instrument is offered by Mine Safety Appliance Co., Dept. AH&RN, 201 North Braddock Ave., Pittsburgh 8, Pa.

"A single reading describes both the frequency and sound pressure variables associated with noise hazard," according to the company.

"Noise levels in the range of 75-140 decibels are indicated by a combination of a dial setting and meter reading."

Power is supplied by a small mercury battery, said to be good for about 45 hours continuous service. The instrument is housed in plastic, with a leather carrying case.

Total weight is 12 oz.

## Oil Heating Boiler Operates Smokelessly

● A new oil heating boiler for new or existing houses, which employs a new smokeless operating principle said to reduce fuel cost substantially, has been announced by Iron Fireman Mfg. Co., Dept. AH&RN, 3170 W. 106th St., Cleveland 11.

"The boiler provides its own air for combustion, therefore does not need a chimney," the company said. "Only a small inexpensive exhaust pipe to outdoors is needed. The smokeless principle also means soot-free operation."

The "Custom Mark II" boiler is 35 in. high, 20½ in. wide, 50 in. long. It can be used for hot water or steam heat. It is available with heating capacities of 110,000 and 145,000 B.t.u.h.


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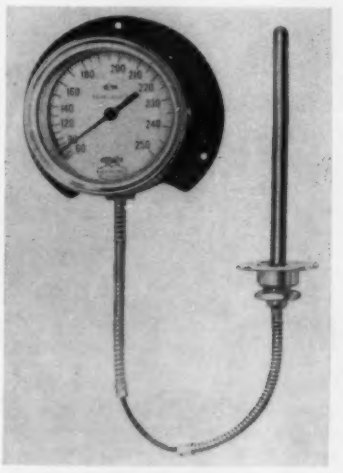

## Dial Thermometers Insert In Ducts

● Insertion type, vapor actuated dial thermometers for duct installations feature ease of reading and dependable accuracy throughout the entire working range, a progressively graduated scale for use in the upper two thirds range, and all brass fittings, according to Weksler Instruments Corp., Dept. AH&RN, 195 East Merrick Rd., Freeport, Long Island, N. Y.

These gauges are enclosed in black enameled aluminum cases with brass slip rings, furnished with a sensitive 6 to 12-in. air bulb with a union connection flange to prevent air leakage, and an extension neck where insulation is present, the company said. They are also available with a small bulb and uncompensated lines up to 150 ft. Case design permits installation for adjustable angle, rigid, or remote reading.

Sizes: 3½, 4½, 6, and 8-in. dials. Standard ranges: -40/65° F., -20/120° F., 0/100° F., 30/150° F., 40/220° F., 60/250° F., 100/350° F.

The thermometers are recommended for duct and casings, at air conditioning units for fresh air, mixed air, supply air, hot decks and cold decks, for freezers, storage compartments, etc.

# How the Dealers See It (1)

## *More Flexible Systems, Better Acceptance Boost Home Cooling But Manpower and Promotion 'Keys' Continue as Problems*

Air conditioning dealers working in the central residential and small-system commercial markets, while not yet ready to declare that their many problems are all solved, nevertheless are looking forward to 1960 with more optimism than at any time since the market's first big boom in 1955.

This was reflected in the discussions among top dealers of the Home Heating & Cooling Div. of General Electric's Air Conditioning Dept., during their award-winning trip to the Hawaiian Islands for their sales achievements in the past year.

As the air conditioning industry heads into the 1960's after a decade of its greatest, if sometimes erratic growth, there seems to be agreement on one point about the industry's future—the dealer who sells air conditioning holds the biggest key to its future growth.

How some of the dealers operating in the central residential and conventional commercial markets felt about the industry's future as the 1950's were drawing to a close is reflected in this two-part article. Editorial Director Phil B. Redeker had an opportunity to talk with a number of successful dealers who won trips to Hawaii in a General Electric Air Conditioning Department sales contest. The first instalment reports their views on the market, and how it can best be promoted and sold. Part 2 will reflect viewpoints on service operations, 5-year warranties, and other problems of a dealership operation.

"We've got to find some methods to make more installations at the peak of the cooling season—people were literally standing in line to get air conditioning put in their homes in our part of the country this past summer," explained Warren Horton of Horton Contractors, Bakersfield, Calif., in talking about one of the "nicer" but still perplexing problems of the business.

Another reflection of the optimistic attitude which these top dealers have towards the future course of the business can be found in the comment of Jacques Sylvain, whose United Combustion Co. has installed as many as 300 year-round residential systems in a single project on Long Island in New York:

### Cooling Ups Home's Value

"You can sell the value in whole house cooling today as well as comfort. When you can point to a new home that is completely air conditioned and show that it costs little more than a comparable home without cooling—or even less if the other home has some 'gimmicky' features—you get attention, and you get buyers."

With air conditioning becoming more discussed among the public, and with more being written about it in the general press, people are getting better acquainted with it, and they are very definite about what they want, relates Leo McKee, Ft. Lauderdale, Fla. dealer. He tells the story of an elderly lady who had called him in to look into the possibility of air conditioning her home, and when he arrived, she told him she wanted a heat pump:

"I told her that for her home, which was quite modest and rather old, a heat pump might not be the right thing, and said that I honestly thought the job might be best done with some room units. But she said 'No, my neighbor has room units, I want the latest, and that's the heat pump.' So we installed one and she's very happy about it."

One of the most encouraging things about 1959 is that the demand seemed to carry well past the traditional Sept. 1 "end of the season" and well into the fall months.

### Can't Get to Prospects

"Most of the contractors in our area were swamped even through October, and were working overtime trying to catch up," says McKee, and also Lynn Taylor of Daytona Sheet Metal Works, Daytona Beach, Fla., and this was echoed by many others, including several in the northern tier of states.

If there were to be any "fault" found in the present situation, it may be that dealers are finding it possible to take just the jobs that "come to them" so to speak, and to neglect efforts to develop business. Some of the dealers said that "more sales are possible, maybe, but there isn't sufficient manpower to chase down the business, or to install it if it is sold."

"I guess I've trained and tried nearly 20 salesmen in the past four years," says Joe Singer of Airko Supply, Inc., Miami, "but they just don't stick in the business. The big problem is getting them to learn even the basic fundamentals of air conditioning.

"I still think this is an industry job of education—maybe carried out on a local level, but perhaps done on a nationwide basis."

Others complained of a lack of competent installation personnel, and Horton, the Bakersfield, Calif. dealer, averred that he is considering a "do-it-yourself" plan for simple packaged residential cooling systems, to break the log jam on installation work at the peak of the season.

"We'd make the layout and necessary sketches," Horton explains, "and provide prefabricated ductwork, but the customer would do most of the labor. We would plan to do the final job inspection and start-up."

### How Flexibility Helps

One factor that is giving the dealers more confidence, and a broader range of markets, is the wide flexibility of applications possible with equipment now available, many of the avowed. A wide range in sizes of heat pump models, in addition to packaged and split-system air-cooled units, make it possible to do an air conditioning job on almost any size or shape of building, and in existing structures equipped with nearly any type of heating system.

One of the more interesting examples of this flexibility can be found in some of the jobs done by Orville White, Jr., White Appliance and Heating Co., Nashville, Tenn., on homes equipped originally with electric resistance heating.

"Most of these homes are constructed in such a way that they have a crawl space through which you can run the ductwork, insulating the supply runs but not the returns," White points out.

"It's a relatively easy manner to install either the G-E 'Airwall' system of air supply, or a perimeter system. Where there are picture or other large type windows, we try to use a long register under them, of the type that U.S. Register makes."

### Tips on Heat Pump Jobs

Another slant on heat pump installations was offered by Robert Stanley of L & L Sales, Inc., Springfield, Ill., which although it is in relatively "cold country" has had many residential heat pump installations and claims to be awaiting its first complaint from a customer about not being "warm enough" no matter what the temperatures dropped to in the heating system.

"We feel that a big part of the answer is in making everything good enough and big enough in a heat pump job," Stanley relates. "Use big ducts and big diffusers, and move plenty of air through them. People who buy heat pump systems in our part of the country are usually the people who want the best, and if you don't give it to them you're taking a chance of hurting your reputation."

Where ductwork is used in a crawl space, L & L will often insulate the crawl space rather than the ductwork. In installations in existing homes, the supply runs used in an old warm


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air heating system can often be used as returns in a new heat pump installation.

Stanley is among those who point to the "flexibility" offered by current packaged and split systems in both heat pumps and air-cooled systems as opening up broader markets for the dealer-contractor, in both light and large commercial work. He reports an installation in a large motel setup in the Springfield area will involve a chilled water system for the guest rooms, and air-cooled packages for the public rooms, as a system that will give best operating results and economy.

The problem of making an adequate profit is a major factor with the dealers. In essence, the final solution to the problem gets down to the matter of "how much do I mark up a job, and on what part or parts of it do I base the mark-up?"

### One Formula for Mark-Ups

One group of dealers operating in the South, referring to cooling installations primarily, state that they try to mark up a job a minimum of 22% on all material and labor except the sheet metal work, on which they add an extra 6 or 8% (possibly to take care of unexpected variables or contingencies in such work). Added to this over-all is an additional 3% for first year maintenance costs.

However, Lynn Carroll of Daytona Sheet Metal Works, Daytona Beach, Fla., says that his firm didn't come up with a satisfactory method of arriving at a proper mark-up primarily on its estimated labor cost on the job.

"When you analyze any job," Carroll says, "you quickly recognize that the labor cost is the big variable. You can come fairly close on your material costs, so that you can shade your mark-up on that part of your costs if you wish. But if you are off very much on your estimated labor costs, that's where you can get hurt.

### Base Mark-Up on Labor?

"In order to establish the right mark-up on your labor to get the proper profit, you should go back and analyze the labor costs on past jobs over a considerable period of time. It's quite likely that it will prove best to vary the mark-up by type of job, but it should not be too much of a problem to develop a standard or series of standard markups and work with them."

Some of the larger dealer-contractors are not so concerned with the matter of "margins" as they are with the matter of developing and increasing volume of business. Some of these metropolitan area operators have some interesting and unusual approaches to selling the market.

"Let the salesman sell, don't burden him with all the details of closing the job," proclaims Mark Scoratow, Pittsburgh dealer, which firm has hung up an enviable record of selling year-round air conditioning as well as heating equipment in the nation's steel center.

"Sure, we want the salesman to get the order, but then we want him to go on and see some other prospects, we don't want him fussing around with all the details of how the job is going to be installed, and how it's going to be financed," Scoratow explains.

"That's our job back at the office, and I personally spend most of my time in 'buttoning up' jobs, making sure that it will satisfy the customer's requirements, and if financing is necessary, getting the right kind of terms for the customer."

Scoratow believes in using all kinds of advertising and promotion means to "pre-sell" the customer, but he thinks that's the best such media can do — to "pre-condition" the prospect for the salesman. The public doesn't understand what air conditioning can mean to them on a personal basis, he avers, and the way to get it across to them is in a face-to-face sales effort.

"We got a good lesson in this when we set out to sell a 'clean air' concept to homeowners— and if there is ever a place where this would seem to be a natural, it's the Pittsburgh area," Scoratow related. "We used newspapers, TV, radio, and direct mail, on a very fine deal— but we hardly got a phone call.

"But we are finding that when we get a personal interview with a homeowner and explain what 'clean air' really can mean to him, we make some sales."

### Approach on Financing

Another area of the sales activity to which the Pittsburgh operator gives close attention is that of financing. He works with both the GECC and with banks, and his relations with the latter are so good that he can get terms up to 7 years on a modernization job in an existing home.

"I've got two suggestions in dealing with financial institutions," he says, "never get mad at 'em, no matter what they do, and don't let a bed credit job go sour to the point where the bank has to step in—follow it down and take care of it."

"LET THE SALESMEN CONCENTRATE on selling, and let someone else 'button up' the details back at the office," says Mark Scoratow (right) Pittsburgh air conditioning dealer being congratulated by Carl Moeller (left) General Electric air conditioning department general manager; and Ben Ramsdell, marketing manager at the Tyler, Texas operation, for his 1959 sales achievements. Scoratow believes that residential air conditioning is best sold by personal contact, backed by competent engineering and proper financing plans.

Selling the builder market is a "must" if a dealer is to attain volume of any proportions in a market such as that which exists on Long Island, N. Y., and Jacques Segal of United Combustion Co. can speak with authority on the subject, for he has equipped home projects of up to 300 units with year-round air conditioning.

It might be said that there are four main points in Segal's philosophy about selling residential air conditioning.

1. Don't worry about competitors and never knock them. Sell the value in the *job* you can do,

*(Continued on next page)*

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# How Dealers See It--

*(Continued from preceding page)*

particularly in terms of the value that the buyer is to receive.

2. If you make a mistake, own up to it immediately, and put all your resources to work to correct it.

3. In selling air conditioning for new homes, go all out in working with the builder in promotion, and do everything possible to enlist the support of the real estate salesman who is actually selling the house.

4. Maintain the best possible relations with your labor force. If your labor is unionized, encourage and support the "good" objectives of the union. Enlist the support of your installation and service personnel to sell air conditioning and your company.

One of the best ways to sell the value of new home air conditioning, says Segal, is to compare a new home in a tract that has year-round air conditioning with other new homes that may have a few more "gadgets" but which are really no more if as much "house" as the air conditioned home, which may often be less in total cost. It is relatively easy then to show that the air conditioned home will have more value over the year, and more actual resale value.

As for working with the builder and the real estate salesman, Segal points to the job that has been done in selling forced warm air heating systems on Long Island. Not too many years ago forced warm air systems were low on the totem pole among the types of heating being installed in the area. Now they probably have the top spot by a wide margin.

"Sure, a lot of our success has been through an aggressive campaign to builders — demonstrating low value at good cost, and working with on-site promotions. But we've also found that where there is a choice of systems in a new tract, the guy selling the house holds a big hand.

### Real Estate Salesman

"The answer is simply to make it worthwhile for him. Most people don't realize how small a commission the real estate salesman gets. You can offer him a relatively nominal commission for selling your system, and probably up his take on a home by 50% or more. I think this approach is going to be a key factor in selling year-round air conditioning in new projects where the buyer has the option of having a cooling system installed."

Maintaining good relationships with labor is just fundamentally good business, Segal says, but beyond that, an organized labor group can help promote the product a dealer sells.

"The sheet metal workers union has been very helpful in promoting forced warm air heating," he pointed out, "and there's no reason why they can't do the same for year-round air conditioning, particularly since it will mean more work for them."

### Commercial Work Assists

Along with an increasing volume of business in residential cooling, Segal's firm has registered a big increase in commercial and industrial air conditioning work. The question was asked, does the expanded effort in commercial and industrial air conditioning interfere in any way with the operations in residential air conditioning?

"To the contrary, I think it adds strength to our work in residential," says Segal. "It enables us to expand our manpower, working tools and our capital structure, and the contracts we make in working the commercial market is bound to help us find and sell prospects in the residential field."

To realize any kind of reasonable return in suppying air conditioning for new tract or project homes the answer is volume, because markups will be low, Segal says, but he warns that volume itself won't insure profit. He believes that other factors are the contractors having his own (and efficient) labor force, and a relatively standard design of system going into each home, so that labor costs can be estimated accurately.

### Supervision a Problem

Agreeing with the thought that high volume is the answer to the dealer "making out" in air conditioning, Dwight Lasater, Lasater Heating & Air Conditioning, St. Louis, points out that estimating and "coming out" okay on labor costs is the critical point. But another problem that goes along with this, he says, is that as volume grows, on-the-job supervision becomes more difficult, and labor costs thus might get out of line.

"I suppose that the only good long-term answer — if you're going to continue to increase volume — is to train some key men to do a good job of supervision," he relates. "But I find that another principal in the firm and myself have to spend much of our time out on the jobs."

"CREATE CONFIDENCE in your work among customers and prospects, and enlist the help of builders, real estate salesmen, and the unions of workers who do your installations," constitutes part of the sales success formula of Jacques Segal (at left with his wife at a party during the award-winning trip to Hawaii. Segal's United Combustion Co. has installed cooling in Long Island home projects up to 300 units per project.

One hopeful note, says Lasater, is that builders in his area are finally getting around to accepting the need for year-round air conditioning, "although they still want to kick it around in their promotions." When the competitive angle on air conditioning is such that it is a standard item in new homes, then the dealer will find much of his problems solved.

There's been a lot of talk about the replacement market for new heating equipment in residences, but not too many dealers have taken very aggressive action on it. One who has is James Hall, Hall Heating Co., Elmira, N. Y., and possibly one reason is that before he became a dealer, Hall had been a successful salesman of heating equipment for many years.

He still does a lot of personal selling, and this is probably a considerable factor in the rapid growth of his business (he is opening branches in other upstate New York communities), but Hall says there are a few basic principles involved which any dealer can put to good use —if he will make the effort.

### Key to Heating Sales

"First, it is true that most heating jobs in existing homes aren't adequate. They don't provide the right kind of conditions during the heating season, they cost more to operate than they should, and in some cases they are downright dangerous.

"Many homeowners feel this is true about their heating systems, but they don't know why, and that's where the heating equipment salesman must do the job—to tell them why their existing system is wrong, and what they'll gain by installing a new one.

"If the homeowner says 'well maybe there's something wrong with my furnace, but it sure keeps it warm enough' that's the best opening a salesman can have, because the very fact that the house is too hot is first proof that the system is a poor one, and any salesman that knows his product should build his story right from there.

"The second main point is that if the homeowner has been approached at all on replacing his heating system it has been by some of the door-to-door type operators with inflated prices and outmoded equipment, so that if a dealer comes in with an honest price, and modern, compact equipment, he has a big advantage right from the start."

*(To Be Continued)*

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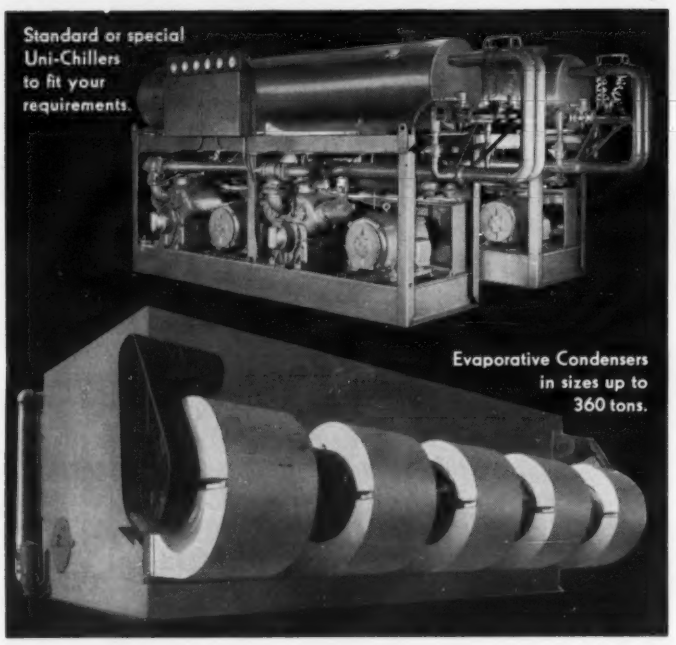


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| Aimco Products Corp., Subsidiary of Yuba Consolidated Industries, Inc. | 728 |
| Air-Con Filter Corp. | 1014 |
| Air Conditioning, Heating & Refrigeration News | 1312 |
| Air Conditioning Industries, Inc. | 1223 |
| Air Devices Inc. | 1110 |
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| Airserco Mfg. Co., Inc. | 1120 |
| Ajax Boiler & Heater Co. | 835, 837, 839 |
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| Allis-Chalmers Mfg. Co. | 200 |
| Alton Mfg. Co. | 403 |
| American Air Filter Co., Inc. | 524, 628, 629 |
| American Artisan | 407 |
| American Furnace Co. | 315, 317 |
| American Gas Association | 1005 |
| American Metal Mfg. Co. | 405 |
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| Arrow-Hart Hegeman Electric Co. | 1213 |
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| Baltimore Aircoil Co., Inc. | 408-12 |
| Barber-Colman Co. Air Distribution Products Division Automatic Control Div. | 705, 707 |
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| Barke Products, Inc. | 729 |
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## Short Hydronics Course Set for U. of Illinois

URBANA, Ill. — Contractors and wholesalers in the field of hydronics will attend a short course Feb. 7-11 at the University of Illinois.

Speakers from industry and the university will discuss how new developments in construction and new trends in modern architecture will affect the design of heating and air conditioning equipment. In other sessions, emphasis will be on effective management of hydronics contracting and wholesaling businesses.

Prof. R. J. Martin, director of the U. of I. Engineering and Experiment Station, will report on recent research in hydronics.

The short course will be conducted by the U. of I. department of mechanical engineering, Bureau of Business Management, and Div. of University Extension, in cooperation with the Institute of Boiler & Radiator Manufacturers.

## Consulting Engineers Brochure Wins Award

SPRINGFIELD, Ill. — The Consulting Engineers Council brochure, "Framework For The Future," a public relations booklet outlining the story of America's consulting engineering profession, was the recipient of special recognition by Graphis Press, international yearbook of graphic and advertising art.

The C.E.C. publication was called "an outstanding example of graphic design."

**NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.**

## Tuck-Aire Appoints Boehm Vice President

SAN FRANCISCO—Appointment of Robert C. Boehm as vice president has been announced by James P. Tuck, president of the Tuck-Aire Furnace Co. here.

R. C. Boehm

Boehm, a registered mechanical engineer, joined the firm in 1953 as a salesman in the southeastern U. S., later being transferred to the Pacific Northwest in the same capacity. In November, 1957, Boehm was appointed general sales manager.

Tuck-Aire manufactures residential and commercial heating and cooling equipment.


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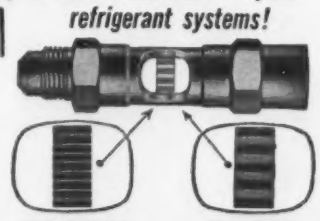

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*At NWAHACA Convention*

# 'It's High Time' Industry Develops Equipment For Electric Heat, Norris of Lennox Urges

ST. LOUIS—"It's high time we in this industry get off our ashcans and develop equipment for electric heating," declared John W. Norris, president, Lennox Industries, Inc., in a talk before the 46th annual convention of the National Warm Air Heating & Air Conditioning Association.

Mincing no words, Norris expressed some criticism of the heating industry, its suppliers, and utilities while noting basic advantages of electricity as a heating fuel (cleanliness and convenience, chiefly) and its disadvantage of cost.

### Ducted Heat Industry To Be Ready Soon For Electric Heat

"We in the ducted heat industry haven't been ready for electric heat, but we soon will be," Norris promised, reminding utilities that "they need us more than most utility engineers have realized."

Because electric heat is necessarily employed chiefly in tightly sealed and well insulated homes—to cut operating costs—mechanical ventilation is essential, Norris emphasized.

With air movement "you reduce the floor to ceiling temperature gradient and actually cut fuel costs," he said.

### Children Racing In and Out Cuts Heating Costs

The latter points were observed, Norris explained, in two identical homes heated electrically, one house being occupied by a working couple gone all day, the other having a family of children who, as to be expected, raced in and out of doors many times daily.

Heating bill for the family with children was less because of the air motion induced by active children while in the home that was unoccupied all day, the air became stratified with warm air at the ceiling, Norris assumes.

"If you've kept the house closed in winter with electric heat," he also remarked, "and then open it up in summer, you've lost all the advantages of electric heat."

Air conditioning is obviously needed, Norris said, which usually means ductwork, and with the ductwork installed then central type heating is dictated, Norris implied.

Because of the current popularity of individual room thermostats used with electric heat, Norris thinks the ducted heat industry should develop two types of systems: plug-in type registers with resistance heaters for individual room control, and central type electric heating units.

Considerable skepticism about individual room control was expressed by Norris, however.

"We don't find people are turning off the room electric heaters the way they do electric lights," he declared.

He also made the point that individual registers in a conventional forced warm air system can be shut manually if so desired.

"These line-voltage thermostats used with electric heat systems aren't as good as the old low voltage thermostats," Norris further commented. "You have essentially a sluggish action."

One popular line-voltage thermostat works successfully in systems using heating cable imbedded in the ceiling because it responds to direct radiant heat, but it is not satisfactory in other type electric heat systems, Norris claims.

"Ceiling cable is a dead duck now, anyway, due to excessive heat loss, streaking, etc.," he also emphasized.

Use of a low voltage thermostat, however, requires a relay, but a satisfactory relay is still not on the market, in Norris' opinion, although "we're next door to one," he says.

With a ducted electric heat system, Norris advises that "you should plan to run the blower all time."

Such a system, he contends, can be designed and installed so as to avoid drafts, "but you'd better pay close attention to blower operating costs," he cautioned.

## Typhoon Schedules Service Meeting

BROOKLYN—The first meeting of a series for service personnel of Typhoon distributors in the New York area on the servicing of air conditioning equipment will be held in conjunction with the February meeting of the Metropolitan New York Chapter of Refrigeration Service Engineers Society.

The meeting will be held at 8 p.m., Feb. 18, at the plant of Typhoon Air Conditioning Div. of Hupp Corp., 505 Carroll St., Brooklyn.

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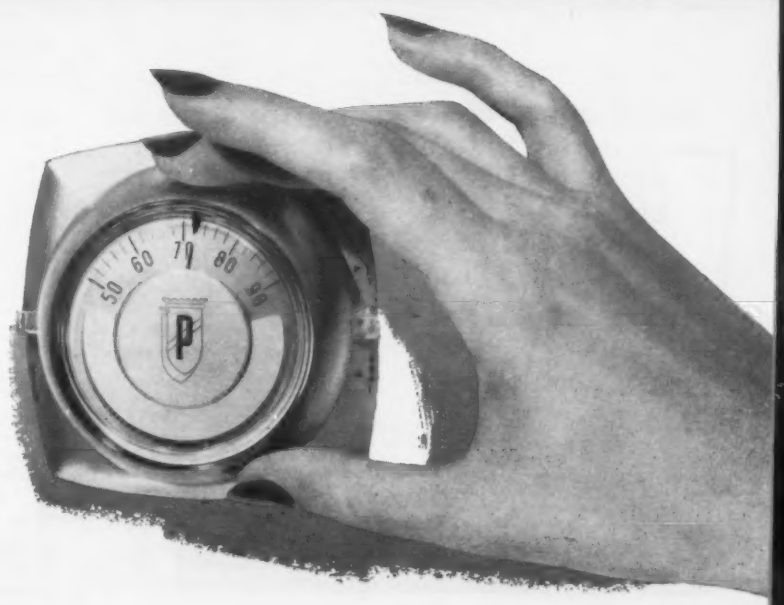

# Minimum Property Standard Revisions Concerning Insulation May Promote Better Practices, Affect Electric Heat Jobs

NEW YORK CITY — Revisions of Minimum Property Standards dealing with thermal insulation, the first of a series of changes and clarifications planned by FHA, will probably result in better insulation practice in some sections of the country, and will encourage the use of electric heat, according to the National Mineral Wool Association.

The new text contains some useful clarifications of the MPS (Section 714-3) on the insulation of living units in general, but for houses heated electrically there are two basic changes, it was pointed out.

First, the figure of 40 B.t.u.h. is specified as the total permitted calculated heat loss per square foot of heated floor area (714-4.1).

"This single national heat loss figure for electric heat is consistent with FHA's policy of setting up performance standards for all types of heating," the NMWA statement said.

"The 40 B.t.u.h. figure is necessarily a compromise, and about as acceptable a compromise as can be arrived at for the wide range of climate."

In the previous MPS, insulation is specified by reference to the National Electrical Manufacturers Association "Manual for Electric House Heating," a widely recognized standard that calls for specific amounts.

The second basic revision is a new formula (1003-16.1) for estimating annual consumption in kilowatt hours, the result of a field study undertaken by the Building Research Advisory Board.

This will provide a lower figure for estimated operating costs than the cost derived from an earlier conservative formula, which was derived from the NEMA manual, the NMWA said.

"The general effect of these MPS revisions will be to make it easier in two ways for the home-buyer to specify electric heat in his new home," it was stated.

"First, the general effect of the 40 B.t.u.h requirement in a great part of the country will be an improvement in insulation practice, and therefore reduced initial cost of equipment and continuous lower operational cost for the life of the house.

"Second, the new electrical consumption formula, giving a lower estimated annual cost, will qualify customers with lower incomes for electric heat because the lower estimated monthly expense will permit a higher mortgage.

"The 40 B.t.u.h. requirement is more stringent for the northern sections than the earlier version, and will, according to our calculations, call for thicker insulation there than former FHA requirements.

### In Accordance with Utility Recommendations

"This is in line with recent opinions voiced by utility executives in Wisconsin and northern Michigan, that even greater protection is necessary for satisfactory installations in their area, especially with ceiling cable heat, than is given by the 6-4-2 program, previously considered ideal maximum thickness (6 in. in the ceiling, nominal 4 in. in side walls, 2 in. over unheated basements or crawl spaces).

"Although in the South the new 40 B.t.u.h. figure is a relaxation of present FHA requirements, in actual practice not many homeowners are likely to find themselves paying greater monthly heating bills, for the use of thick insulation is growing for summer comfort, with or without air conditioning.

### Insulation Group Studies Possibility Of More Flexibility

"For the future we in the National Mineral Wool Association are investigating the possibility of a more flexible and widely applicable heat loss formula that would take in local degree days, design temperature, and, not least important, the local cost of energy. Thus, insulation minimum requirements would be a function of the specific conditions to be met.

"We shall also continue to educate the public to the basic principle that the best insulation is the most insulation."

The new general paragraphs (Section 714-3) on insulation of one or two living units, not heated electrically, clear up some minor ambiguities, it was noted.

For example, Par. 714-3.2 adds the specification "for heat flow up" in listing the U value for ceilings below an unheated space. This is relevant to varying efficiencies of reflective surfaces according to direction of heat flow.

There is also a specific statement that a garage is considered unheated unless provided with a positive heat supply to maintain a minimum of 50° F.

The earlier statement, "Insulation should not be installed in floors over heated basements or crawl spaces," is omitted.

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# 1960

## THE AIR CONDITIONING "SHOW CASE ISSUE" MARCH 7

**As reported in a recent issue of the NEWS**

*"There seems to be every reason to believe that 1960 will see sales performances exceeding those of 1959 and perhaps establishing records for almost every kind of product that the industry sells!"*

As the *only* Weekly Newspaper of the Industry, AIR CONDITIONING, HEATING & REFRIGERATION NEWS covers the important trends and happenings of this booming market every week.

The annual Air Conditioning "Show Case" Issue, however, takes an additional step in providing useful and useable information to its readers who comprise the top buying influences in this expanding market. Devoted entirely to the air conditioning market (residential, commercial, and industrial), this year-'round reference issue provides:

The industry's largest and most comprehensive detailed listings of comparative specifications on all major makes and models of packaged air conditioners;

The latest facts on merchandising and selling air conditioning equipment;

Valuable sales helps to make 1960 the best air conditioning sales year yet; and

Detailed market analysis, new air conditioning applications, tested sales methods and details from manufacturers about the features of their new lines!

Here is an issue that dealers, manufacturers, distributors, and contractors look forward to receiving, studying, and retaining for constant reference in their many buying decisions. Why not take immediate action to reserve enough space to tell your complete product story in the March 7 "Show Case" Issue. Any of the offices listed below will be pleased to provide complete details!

**AIR CONDITIONING "SHOW CASE" ISSUE**

**PUBLISHED MARCH 7**

**CLOSING DATE FEBRUARY 24**

**AIR CONDITIONING HEATING & REFRIGERATION NEWS**

*Business News Publishing Co.*

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# 'Forced Humidifiers' (1)

## *Consumer Interest In Humidity Control In Winter Means Growing Market for Dealers*

This is the first of a series of articles dealing with "forced humidifiers"—a relatively new product offering interesting sales possibilities for the residential heating and air conditioning contractor. Broad aspects of the subject will be discussed in the series, including the market, sales approaches, application, and service plus specific information about 14 different makes.

The material was gathered in personal, phone, and mail interviews with many individuals, including manufacturers, dealers, and others.

The "forced humidifier"—potentially one of the "hottest" specialty items to hit the residential heating trade in several years—not only offers many possibilities for profitable sales in itself, but, perhaps even more important, provides an excellent door-opener for the enterprising contractor.

Prospects for a "forced humidifier" may very well be quickly qualified as prospects also for a new furnace or system modernization program, possibly including air conditioning, without the ruse of dismantling a good piece of equipment under the guise of a "free inspection."

### For Some Time Public Has Been Interested

While "forced humidifiers" (see discussion of terms in accompanying "box") have been in production for some years, the introduction of several more makes within the past year or so represents an important break-through towards the ultimate market potention. Very likely this marks the first major upswing along the traditional sales curve noted for most "appliances."

Surprisingly enough, though it really isn't too hard to understand, the public has apparently been more interested in these devices than has the average dealer-contractor in the heating business.

A good example of this, and of the forced humidifier's possibility as a door opener to a really big sale, can be noted in the experience of one contractor who, as the result of a casual conversation, was called in to see if he could improve humidity conditions in a residence whose owner suffered from respiratory difficulties. The householder's "nose was stopped up," bluntly explains the manufacturer whose humidifier was ultimately installed. Besides installing a forced humidifier, the contractor wound up with a $1,200 job revamping the entire system and then six months later was invited to add summer air conditioning!

A manufacturer of humidifiers and other components has been "amazed" at consumer inquiries about the firm's new forced humidifier resulting from national and local advertising.

Another manufacturer — of furnaces — says it was more or less "forced" into making forced humidifiers by public demand as evidenced by comments at home shows.

This voiced interest on the part of consumers has also been backed up by actual purchases, it is indicated, although the sales potential has hardly been scratched yet, admittedly.

The increased consumer awareness of the need for improved humidity conditions in the home probably stems from technical and economic changes in the heating industry, or so believe some humidifier manufacturers.

Back in the days when the gravity hot air furnace was the most widely used method of central heating, a humidifier of sorts was usually supplied as an integral part of the furnace. A water pan provided in the bonnet could either be filled by hand or automatically by means of a float or drip valve.

It is questionable how much moisture was added to the air by these devices, but certainly the high bonnet temperatures and constant heat provided by the coal or wood-fired furnace would drive more moisture into the air than would occur if the same pan were employed in a modern forced warm air furnace with a cycling gas or oil fire.

Probably a certain amount of moisture was added to the air by the radiator valve on the old one-pipe steam-heating system, too, but water pans on radiators were fairly common in those days also.

As forced warm air furnaces with lower bonnet temperatures replaced the gravity units, humidifiers were generally supplied as part of the original equipment, but a pan alone would not suffice. Extended surface in the form of capillary "wicks" or plates became popular. While these did increase the amount of moisture added to the air, the amount was perhaps less than put out by the simple pan of the old gravity furnace, at least when just the usual five plates or less were provided.

### Humidifier Was Victim Of 'Price War'

Similarly, the event of two-pipe hot water systems, camouflaged radiators, and convectors pretty much spelled the doom of water pans on steam radiators.

Then economics came sharply into the picture. When the furnace industry started its "price war" about 10 years ago, prices and costs were shaved downward. One of the first casualties was the humidifier. If the customer wanted one, it was an optional extra. And in most instances, the heating contractor didn't even try to sell him one.

The heating dealer's attitude is understandable. Although the average heating dealer-contractor has never been famous for enterprising salesmanship (there are bright signs on the horizon now, however), the average plate-type humidifier doesn't offer too much in the way of exciting profit possibilities, admit even manufacturers of such devices.

### Plate-Type Unit Sold At $20 Plus Labor

A plate-type unit retails at around $20, generally, and the contractor can justify another $10 for installation. This isn't too bad in itself, but there's little margin left for service and nuisance calls.

Virtually any type humidifier requires attention from time to time. Evaporating of water is bound to result in scaling or other problems, which become more severe as the hardness of the water increases. This can leave deposits on plates, clog up float valves, etc.

The average customer who has been *sold* an "automatic" plate-type humidifier usually can't understand the need for frequent attention or service on the device and is most reluctant to pay a dealer for a service call. (Actually, the only moderately "handy" householder can easily do it himself.) And the dealer can't provide "free" service what with the comparatively slim margin he has in the sale, so he has understandably developed an "ohtohellwithit" attitude.

### 'Forced' Humidifiers Cost $90 Plus Labor

Things should be different with the newer "forced" humidifiers, however. These retail at around $90 and up, plus installation, and plus the possibility of selling a humidistat for another $20.

Conceivably, just as much or possibly more service may be involved with a forced humidifier as with conventional plate-type units, but the contractor has a much greater margin to play with if he decides to offer a limited amount of free service.

Further, the consumer, if he is properly "sold" at the beginning, should be more willing to pay for whatever service is needed. Having invested a considerable sum in a "deluxe" device, the consumer should be more interested in protecting his investment, proxided, of course, the humidifier normally operates satisfactorily.

No humidifier should ever be sold on the basis of its requiring absolutely no attention, but the "care and feeding" of same is not an uninteresting hobby, however.

*(To Be Continued)*

## *Better Term Needed?*

There is seemingly an urgent need for a term that is not only accurate but also packs the sales appeal of "fluid drive" or "hydramatic" to describe the humidifiers under discussion. For lack of a better expression, the term "forced humidifier" is used in the accompanying article to distinguish these from conventional plate-type units.

The word "positive" would probably be just as accurate as "forced," but no better otherwise. "Automatic" is out because it likewise applies to plate-type humidifiers; "controlled" has been suggested, but this too could include plate-type units in that the amount of humidification can be controlled by number of plates used.

"Unit humidifier" is the term employed in the 1959 Guide of the (then) ASHAE, but this seems an extremely broad term and it can hardly be called exciting from the sales point of view. The Guide further breaks down the classification of "unit humidifiers" into four "general" types: (1) "nozzle" type, (2) "rotary" type, (3) "cascade" type, (4) "heater" type.

While not wishing to argue with editors of the Guide, we believe the classification below, which is likewise based on methods of "forcing" the moisture into the air, is actually more "general" in scope and follows more closely the usual rules of taxonomy. So the humidifiers herein are described as:

A. *Atomizing.* Water is atomized into the air stream by a pressure nozzle or by a rapidly revolving spray wheel or disc.

B. *Evaporating.* Air is forced through a wetted metal "pad" (as in an evaporative cooler) or a drum that revolves in a water-filled pan.

C. *Vaporizing.* A heating element, usually electric, immersed in water boils off moisture into the air stream.


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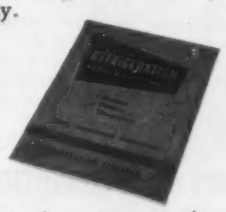

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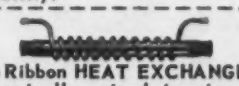

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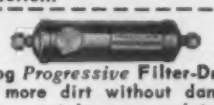

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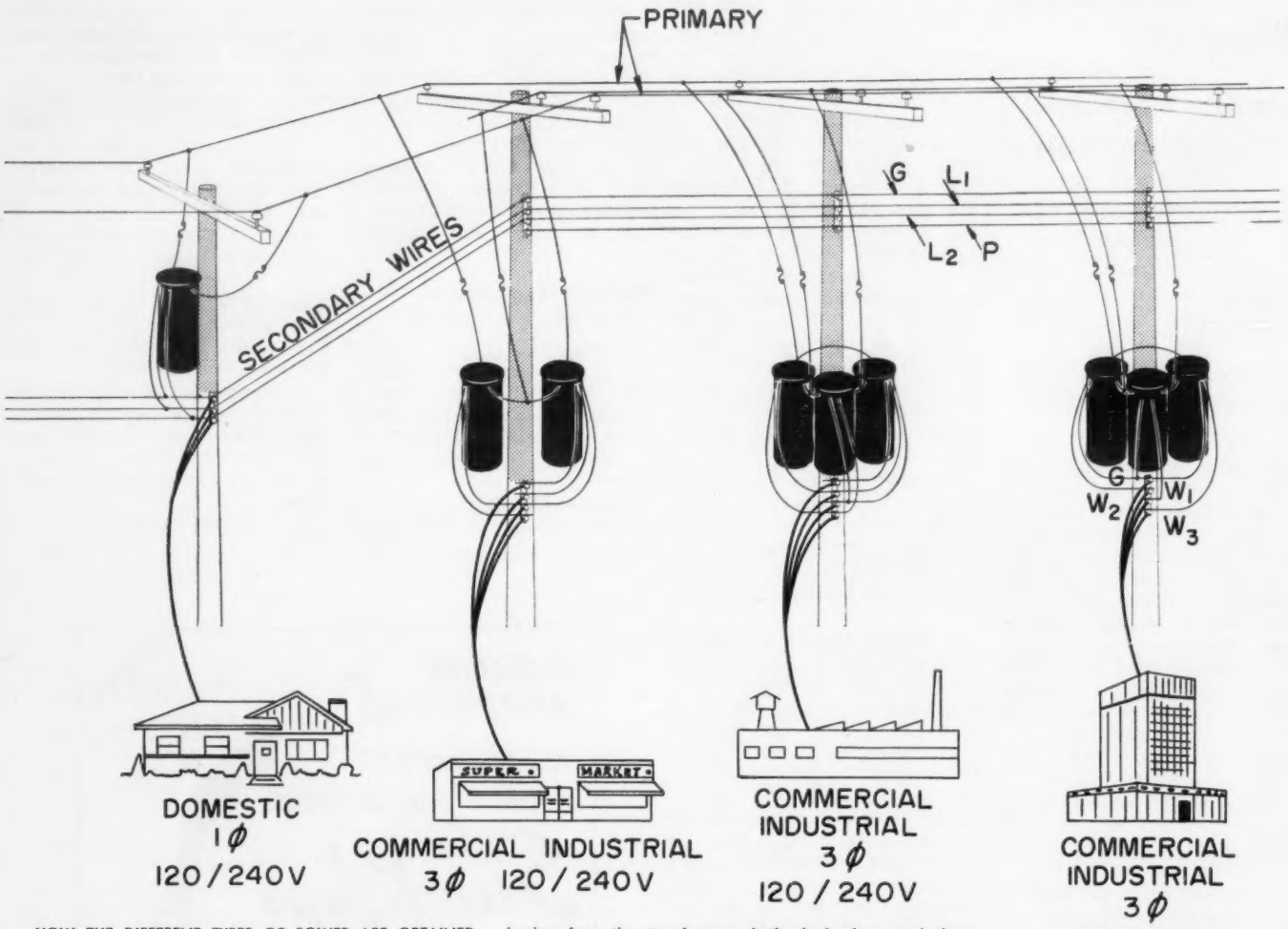


HOW THE DIFFERENT TYPES OF POWER ARE OBTAINED. The primary wires, running along the tops of the utility poles, carry the current at distribution voltages, say 4,800. Where three-phase power is to be taken off, all three wires are carried on the poles; when single phase will be used, either three or only two primaries may be used.

At the far left, two wires enter the pole transformer where the secondary is so tapped as to give single-phase, 120/240-volt power over three wires, one neutral. The three secondaries from a single pole may travel from pole to pole and serve several houses—as many as the rating of the transformer will allow.

Next, three wires are run from the primary into two transformers (which may be in a single shell). From the four wires issuing from the transformers, both single-phase and three-phase power are obtained at 120/240 volts. Again, secondaries can run from pole to pole so that one transformer serves several consumers.

The third sketch shows another connection for obtaining the same secondary service as in the setup just discussed. The power company chooses the method according to its over-all need to balance its distribution system.

At far right is shown the manner in which the 120/208 or the 277/480 network are obtained.

Together with the more detailed discussion in this series, this sketch will allow the reader to understand the manner in which several types of utilization power are obtained from the same three primary wires. *(Courtesy Detroit Edison)*

adjuncts of the a.c. generating station.

Very briefly, this segment of the electrical series will describe the transmission and distribution steps involved in getting electrical power from the generating station to the consumer.

The next article in this series will be a picture story illustrating the function of the frequently seen electrical apparati which abound in cities and cross country. This article and the picture story should be read together to obtain a tangible understanding of power transmission and distribution.

Turbines, driven by hydropower or by gas, oil, or coal-fired steam, produce the mechanical rotation needed to cause relative motion between a magnetic field and electrical conductors. The induced electricity is fed outside into giant **step-up transformers.** (Transformers are electrical devices which either raise, step up, or lower, step down, the voltage supplied to them. Their operation will be discussed in a later article.)

In the step-up transformer, the 18,000 volts generated by the turbines is raised to 120,000 volts, or whatever voltage the system is designed for. (Specifics in the following discussion apply to the Detroit Edison Co. While transmission and distribution voltages differ in other areas, the basic principles of power generation and handling are universal.)

After the step-up transformer is the **mat**—a type of shipping

## TECH CENTER

*by Frank J. Versagi, Technical Editor*

# Applied Electrical Theory (9)

## *Power Distribution*

In the beginning, direct current was used to supply lighting and motor loads in the fledgling electrical industry. A major disadvantage of d.c., however, is its inability to be transmitted for any great distance from the generating station without excessive power losses. Too, without expensive and complicated apparatus, the voltage of direct current cannot be as easily raised and lowered. As a result, direct current is generated at the same voltage at which it is utilized, and a generating station is needed every square mile.

Several inventions and a couple good guesses gave the practical advantage to alternating current, and the substations, miles of overhead and underground lines, switching and transforming equipment so familiar in our technology are all


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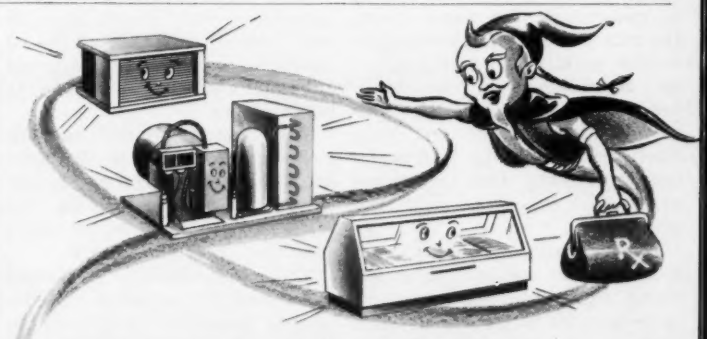

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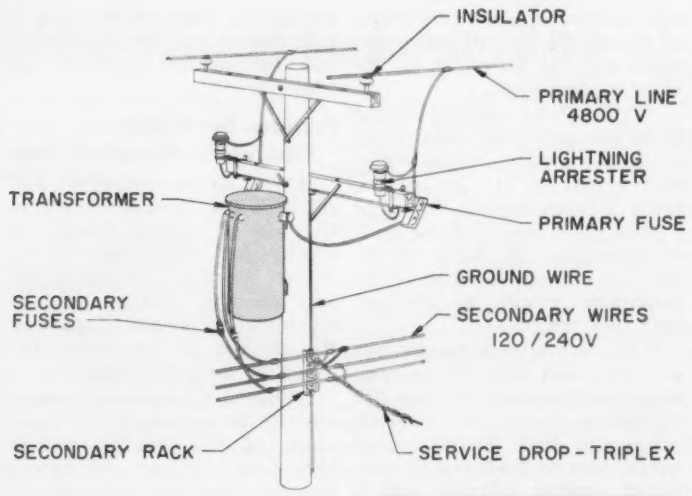
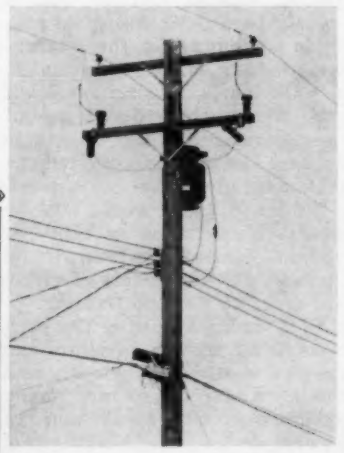



THIS SKETCH AND PHOTO of an actual pole transformer/service setup identifies the most obvious components seen on a typical utility pole. Lowermost wires in photo are telephone service.
*(Courtesy Detroit Edison Co.)*



department. In its maze of steel towers, cables, and relay equipment, the electricity begins its journey to the customers along the transmission lines. The term **transmission lines** refers to the conductors which carry the electricity from the generating station through utility-owned switching stations to substations.

In the substation the transmission voltage is lowered to 4,800 in a step-down transformer. From the substation, **distribution lines** carry the electricity either directly to industrial customers who purchase power at a primary rate and do their own stepping down or to strategically located step-down transformers each of which serves a group of industrial or domestic customers.

An **a.c. network** can reduce the 4,800 volts from the substation to the proper **utilization voltages** and deliver these to individual customers in a downtown or commercial district.

In residential zones, the step down is usually accomplished by **pole transformers** and the power enters the home through the **service entrance** (meter, fusebox arrangement).

From this brief review of electrical generation and distribution, it is obvious that the several utilization voltages (120/240, 120/208, 265/460) and single and three-phase power must all be obtained from the generating station and transmission lines which generally produce and transmit only one emf, not a multitude of voltages.

Normally, **three-phase** alternating current is generated. (Three a.c. wave forms, following each other at 120 geometric degree intervals, give three-phase, $3\phi$, power.

For each $3\phi$ circuit leaving the generating station, three conductors must carry the current. After voltage has been stepped down to distribution levels, the way a transformer is tapped and the way its utilization voltages are picked off the lines determines whether power is $1\phi$, $3\phi$, or both.

**NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.**

## Dunham-Bush Ups Jacobs To Ad Mgr.

WEST HARTFORD, Conn.—Walter S. Browning, vice president of heating sales for Dunham-Bush, Inc., has announced the appointment of Joseph Jacobs, Jr. as advertising manager.

J. Jacobs, Jr.

Jacobs will direct all phases of advertising and sales promotion for the West Hartford concern's extensive line of air conditioning, refrigeration, heating, and heat transfer products.

International in scope, Dunham-Bush advertising is coordinated to include all media for manufacturing facilities in West Hartford, Conn.; Michigan City, Ind.; Marshalltown, Iowa; Riverside, Calif.; Canada and England, as well as export.

## *Pennsalt Plans New Technical Center*

PHILADELPHIA — Pennsalt Chemicals Corp. has concluded negotiations with Cabot, Cabot & Forbes to purchase a 50-acre site in the King of Prussia Park for construction of a technical center which will ultimately represent an investment of $6,000,000, the company announced.

William P. Drake, Pennsalt president, said the purchase will permit an orderly expansion of Pennsalt's growing needs for technical facilities; for research, development, and technical service. Currently, Pennsalt operates technical facilities at Wyndmoor and Devon.

Plans call for a campus-type arrangement featuring a central mall. The first building in the complex will be a two-story laboratory occupying approximately 21,000 sq. ft. This will be devoted to product development and technical service on Pennsalt's proprietary chemicals for the metal working industry, laundry and dry cleaning trade, food and dairy plants, as well as consumer products for the farm and home.

The "Isotron" refrigerant and aerosol propellant technical group will also occupy expanded facilities in this new building, it was noted.

## W. Songer Elected Crane President

CHICAGO—Election of Wesley A. Songer as president and chief administrative officer of Crane Co. was announced by T. M. Evans, chairman and chief executive officer.

W. A. Songer

Songer formerly was executive vice president, a position to which he was elected June 23.

L. H. T. Clegg, president of Crane, Ltd., Montreal, Que., Can., has been acting president since April 28. Clegg remains as president of Crane, Ltd.

In announcing the election, Evans noted the progress made in the rebuilding of the company's earnings position during the past six months. It includes the reduction of inventory and overhead, the discontinuance of many unprofitable items from Crane's product line, and the judicious addition of new products, Evans said.

### Charter Granted

MONROE, La. — Capitalized at $50,000, Gregg's, Inc., 506 N. Sixteenth Ct., has been granted a charter to deal in air conditioning equipment.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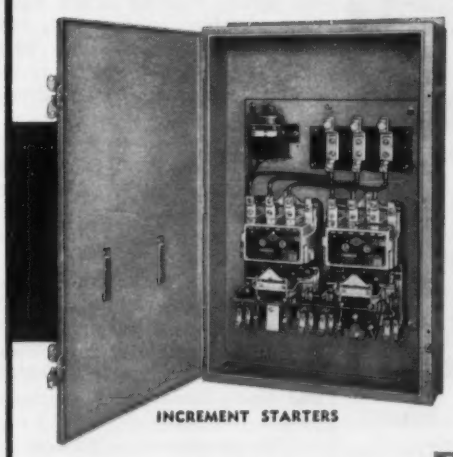
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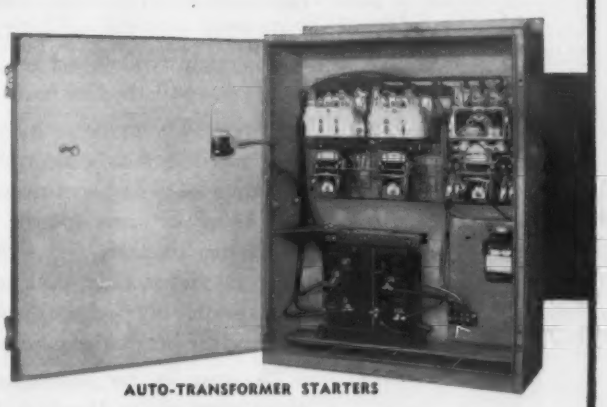
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# Winter Operation Problems

## *Advice on Special Care of Cooling Towers, Evaporative Condensers To Help Prevent Trouble Offered by WSL's Chief Chemist*

NEW YORK CITY—Serious problems of freezing and ice formation can be posed by the necessity of winter operation of cooling towers and evaporative condensers of air conditioning and refrigeration systems, according to Water Service Laboratories, Inc.

Techniques for avoiding the trouble resulting from these problems are suggested by Dr. Sidney Sussman, chief chemist of WSL, a firm of chemical engineers specializing in corrosion prevention.

Dr. Sussman points out that winter operation of this type of equipment is increasing rapidly because of the numerous applications which are becoming so commonplace.

### 3 Operational Schemes For Winter

Ice formation during winter operation may be prevented or controlled by varying the method of operation of the cooling tower or the evaporative condenser, in many cases merely to prevent the circulating water from getting too cold, he says. The chemist suggests three operational schemes for winter operation:

a. Normal circulation with both sprays and fan in operation.

b. Sprays on but fan off.

c. Neither sprays nor fan operating. Water flow is bypassed through the pan of the cooling tower.

"Some installations make use of all three of the above procedures at different times," it is pointed out. "Or, the procedures are modified by using the cooling water temperature to control a thermostatic valve which varies the amounts of the circulating water going to the sprays and to the pan.

### Using Dump or Surge Tank Indoors

"The prevention of freezing in exposed circulating water lines when the cooling tower or evaporative condenser is not being operated can best be accomplished by mechanical methods."

One technique described by the chemist is to use a dump or surge tank indoors. The equipment is arranged so that every time it is shut down or every time the water temperature falls below a specified minimum, say 35° F., the contents of the outside portions of the system drain into the surge tank.

"In most such installations, during winter operation the cooling tower pan or evaporative condenser does not contain the same depth of water as during summer operation," it is stated. "Instead, the pan drains completely as soon as the circulating water flow is shut off."

### Heating Lines with Steam, Electricity

A second technique for protection of exposed water lines from freeezing is to wind about them thin copper steam tubing or electrical resistance wire, and to cover this with insulation.

"The lines can then be heated by steam or electricity, controlling the application of the heat with a thermostatically controlled switch or valve located at the coolest spot in the system," the WSL report says.

"Such installations are generally set to start the heat when the water reaches about 35° F. and to shut it off when the water gets to about 40° F.

"It is usually not necessary to protect the cooling tower pan since the formation of ice in it will cause no damage, although in some cases the pan is also heated by the same method in order to insure against freezing completely and thereby interfering with water flow when the equipment is to be operated."

### Why Glycol Anti-Freeze Isn't Entirely Practical

A commonly suggested protection from freezing when the water is not circulating during the winter months is the addition of glycol anti-freeze, but there are several reasons why this method is not entirely practicable, according to Dr. Sussman.

"In the first place," it is pointed out, "under certain conditions the glycol may react with chemicals that have been added to the cooling water for protection of the equipment against corrosion or scale formation. More important, however, is the fact that special measures are needed to keep enough glycol in these cooling systems to be effective and these measures may make its use too costly.

"The excessively high cost of using glycol as an anti-freeze in a cooling tower when both fans and sprays may be operated can be realized by considering an average cooling tower which circulates 3 g.p.m. per ton of refrigeration and has a windage loss of approximately 0.15% of the circulating rate. Thus, for a 100-ton cooling tower the windage would be 0.45 g.p.m.

"If glycol were required to protect such a tower to -10° F., a common level for anti-freeze protection in many areas, it would be necessary for the circulating water to contain 38% glycol by volume. Thus, the 0.45 g.p.m. windage loss would actually include 0.17 g.p.m. of glycol.

"Of course, the bleed would also include the same proportion of glycol, but we will ignore the bleed for the purposes of the present calculation.

"With glycol costing about $1.80 per gallon in large quantities, the windage would represent a loss of 31¢ per minute for a 100-ton cooling tower, or a little more than $18 per hour of operation. In other words, the loss of glycol under these conditions would be 18¢ per hour per ton."

With such a large rate of loss of glycol and with the makeup water continuously diluting the circulating water, Dr. Sussman points out that the equipment would soon be inadequately protected against freezing and it would become necessary to provide equipment for the continuous feeding of makeup glycol.

"Obviously, during much of the winter the reduced use of sprays and fan would greatly reduce the windage loss and the resultant glycol loss," it is noted. "However, there would still be water losses, such as those at pump bearings, which would necessitate the feeding of glycol in order to prevent freezing.

"In addition, during the periods of alternating moderate and severe weather in the early and later winter there are many times when both sprays and fan would be used and heavy glycol losses would occur.

"That such glycol losses are not merely theoretical is shown by the recent experience of a large industrial company at one of its Long Island plants. It attempted to protect two 35-ton cooling towers by the addition of glycol.

"Despite the addition of $150 worth of this anti-freeze they were never able to find any appreciable glycol content in the circulating water when using a hydrometer and the equipment was full of ice much of the winter."

### Prepare for Winter Operation Ahead of Time

When air conditioning and refrigeration systems require the use of cooling towers or evaporative condensers during winter weather, ice formation and freezing damage can be minimized by simple changes in the method of operation, Dr. Sussman says in summary.

"When it appears that winter use will be necessary, the operation of the cooling system should be analyzed well before freezing weather sets in, in order to allow time for making any necessary mechanical changes," he states.

**NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.**

## RMC Becomes New Name Of Refrigeration Maintenance Corp.

CHICAGO — Refrigeration Maintenance Corp., 321 E. Grand Ave. here, has changed its name to RMC Inc.

"The company has served the Chicago metropolitan area for the past 30 years," the announcement noted.

"During this time it has continued to broaden its activities, which include heating, air conditioning, refrigeration, and appliance servicing as well as heating, air conditioning, and refrigeration sales and construction, with the result that its former name no longer conveys its present scope."

The company's corporate structure and personnel remain the same.

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# 200 To Show at Southwest Exhibit--

*(Concluded from Page 1, Col. 5)*

Units are designed to handle applications from 500 through 6,500 c.f.m.

Also scheduled for introduction is Recold's new DCU, an air-cooled condenser featuring vertical discharge. It will be equipped with Recold's new system of winter controls. Among other items to be shown is the "Vapomatic" demonstrator which demonstrates Recold's automatic Vapomatic defrost unit.

Arkla Air Conditioning Corp. will unveil its new 25-ton direct-fired water chiller. Other items on exhibit will include the new "Sun Valley" remote gas air conditioner and Humphrey multi-directional unit heaters and room circulators. Arkla's showing will be included in the Unified Gas Air Conditioning Exhibit.

### Multi-Drive Compressors, Air Handling Units Due

Several new products will be displayed by Dunham-Bush, Inc. These include multi-drive compressors, air-handling units, low silhouette blower condensers, roof-top air conditioners, recessed year-round air conditioners, and a wall radiation line.

Visitors to the American-Standard Industrial Div. display will see new packaged multi-zone air conditioning units, and a new Airfoil bladed fan in addition to other products.

Baltimore Aircoil Co., Inc. will focus attention on a new line of cooling towers from 10 to 600 tons and a 100-ton blow-through evaporative condenser designed for indoor application.

A new automatic traveling curtain filter and new manually operated and high efficiency disposable media filters are to be shown by Farr Co.

### Defrost System Is Heat Pump Feature

John Felter Co. of Houston, Texas, will exhibit a new remote heat pump which it says removes frost on exterior coils as quickly as it forms without reversing the cycle or adding electrical energy. The firm also will show a new, adjustable pattern ceiling diffuser.

C. A. Olsen Mfg. Co. said it will display two new "Luxaire" air-cooled condensing units in 2 and 4-hp. sizes.

Introduction of an expanded line of Peerless "Uni-Matic" unit heaters to 300,000 B.t.u. and redesigned recessed wall furnace with top-to-bottom louvered design is planned by Peerless Mfg. Div., Dover Corp.

### Several To Feature Heat Pumps

A rundown on some of the other products to be featured at the exposition has been provided by the exposition management. This report, which did not identify exhibitors by name, said heat pumps will be featured by several of them, along with both remote and self-contained air conditioning units.

One will introduce completely new models of air conditioners and heat pumps, as well as a new line of compact forced-air furnaces.

Another, specializing in residential and light commercial refrigerated air conditioning, as well as heat pumps, is offering a remote condenser unit designed to provide high economy at high ambient temperatures.

A manufacturer of 2 to 10-ton remote air conditioners and heat pumps, will offer water-cooled condensing units on grounds of high capacity and low operating cost.

Distinctive will be a packaged 50-ton air conditioner with built-in evaporative condenser, which may be installed inside a building as a self-contained unit, or set up independently, completely exposed, but requiring no penthouse or other covering, it was reported.

### New Approach To Design Of Cooling Condensers

A new line of unit heaters and a new approach to the design of cooling condensers are to be offered in one display. A line of packaged liquid chillers with optional condenser units will be offered in another in sizes up to 125 tons.

One of the most complete lines of general heating and air conditioning equipment is offered by an exhibitor whose basic air heater design is adapted to four different load applications without conversion in the field, and may be changed over to air conditioning by a simple change which provides for additional air circulation, it was pointed out.

A "latent storage refrigeration system" is readied by another exhibitor specializing in the air conditioning of churches, lodge halls, funeral homes, and public auditoriums, where high peak loads prevail for only a few hours at a time and at intervals.

### Many Specialities To Be Exhibited

Specialties will be exhibited in great numbers at Dallas, the show management reported.

One line will be a silencer for air handling systems, placed on view for the first time following complete redesign. It is said to provide higher noise absorption at lower frequencies, to have have minimum pressure drop and maximum pressure regain. For extra noise absorption special resonator compartments are now provided.

Another exhibitor will display a "completely noiseless" air conditioning system. It is silent because it operates by gravity circulation and does not even require the use of fans, the report said.

A manufacturer of revolving and expansion joints will offer a new copper joint for radiant heating systems. A well-known line of valves will be supplemented by a renewable seat ring bronze gate valve, which permits valve seat replacement without removing the valve body from the line.

New in the field of heat pump applications is a thermostatic expansion valve. Special construction is said to permit precise automatic control without "hunting," while the design has been developed for extreme durability.

The exposition will also reveal an extensive collection of attic fans, roof ventilators, and other air moving equipment. Where one line will be featured in terms of its compact package design, another for its all aluminum construction and smoothly designed exposure, still another will feature quiet performance because power assembly is mounted on springs.

One manufacturer of national note is bringing out more new products in 1960 than at any time in the last 10 years.

Among products to be offered in the field of multiple space air conditioning will be a high-velocity, double-duct control unit designed to mix hot and hold air and reduce it to conventional velocities. This equipment is said to feature an extremely simple self-operated constant volume regulator.

The same exhibitor will also be introducing what is termed the first fully transistorized electronic control at a price that will be competitive with standard control units.

Among other developments to be introduced at the exposition will be a low-cost controller unit for multiple unit operations. It is designed to energize from two to ten separate electric circuits in sequence at preselected temperatures, times or pressures, whichever is the key control factor. The system reportedly represents a new concept for staging or selectively operating compressors, chillers, heat pumps, boilers or other units.

Another innovation is a thermostatic control for individual rooms or zones "which is directly applicable to both air and hydronic systems and is equally effective on heating and cooling phases." Low voltage motor operated valves (for hydronic) or dampers (for air) are energized by individual thermostats.

A significant development in hot water boilers has come about through the research of a manufacturer of fully automatic packaged boilers, whose line has now been extended to capacities of 15 to 600 hp. The new design is applicable to high temperature forced circulation systems.

### Electric Duct Heater Unit

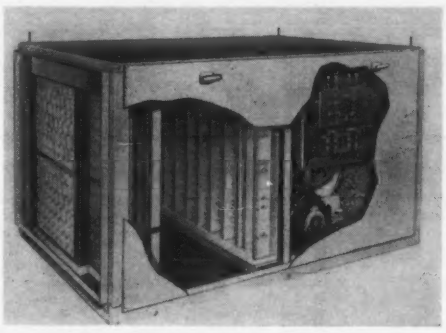
Another new product scheduled for introduction is an electric duct heater unit, packaged with its own controls and suitable for field installation. It will be shown by a manufacturer of open coil resistance heaters for furnaces, baseboards, and heat pump applications.

Of special interest to air conditioning contractors will be a new indicator for gauging and regulating the flow of heating and cooling water through pipes, as well as a new portable vacuum pump for evacuating refrigerating systems.

A new addition to a line of air conditioning and refrigerating controls and components will be an expansion valve with built-in inspection window.

A new series of unit heaters and recessed, vented gas furnaces will demonstrate the role of venting in relation to various gas appliances.

Commercial and residential registers and grilles, diffusers, and accessories will be shown.



CUTAWAY of new Mueller Climatrol electric furnace which has provision for "fast and economical adaption to summer cooling."

# Mueller Furnace Adapts for Cooling--

*(Concluded from Page 1, Col. 3)*

The Type 319 electric furnace is available in 81,840 B.t.u.h. output. The furnace can easily be adapted to central air conditioning by placing a cooling coil directly into the casing of the Type 319 without any changes in the furnace or plenum arrangement, it was pointed out. A new centrifugal type remote condenser can be used as part of this cooling system.

"The electric furnace cooling section includes built-in coil hangers and drain pan, thereby eliminating the need for a cooling coil cabinet," the announcement said. "Summer cooling can be added at the time of installation or at a later date with a minimum of expense."

Other standard equipment includes a built-in filter rack and filters. The large centrifugal blower provides low sound level operation and gentle, also imperceptible air circulation. Resilient mounted blower motor has a variable speed sheave and V-belt drive.

"Blowers are dynamically and statically balanced, cabinets of heavy gauge steel are thermo-acoustically insulated as another step in sound reduction.

"Four 6 kw. heating elements are energized and de-energized by a four-stage sequencer control to provide modulated heat. The control panel is of an advanced design to provide uniform temperatures and afford operating economies.

"The electric furnace is shipped completely factory wired. It is only necessary to connect power lines and thermostat cables to the control panel.

"Horizontal design of the electric furnace lends well to easy suspension in a home's crawl space, basement, utility room, or attic. No floor space is required. The unit may be operated with or without a duct system."

## Clarence E. Pullum Dies After Long Illness

MORTON GROVE, Ill.—Clarence E. Pullum, executive vice president-treasurer and director of Bell & Gossett Co. here, died Jan. 8 at St. Francis hospital, Evanston, Ill. after a long illness. He resided in Oak Park, Ill.

Pullum, who was born on June 30, 1893, leaves his widow, Fern C.; a daughter, a brother, and two grandsons. He was chairman of the board of the Marble Cos. located in Gladstone, Mich.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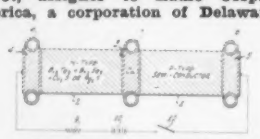
1-18-60

# PATENTS

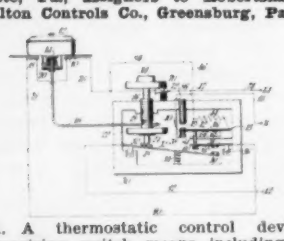
## *Week of Sept. 1 (Concluded)*

**2,902,528. THERMOELECTRIC COUPLE. Fred D. Rosi, Plainsboro, N. J., assignor to Radio Corp. of America, a corporation of Delaware.**



4. A thermoelectric couple comprising two circuit elements of thermoelectrically complementary semiconductor materials, said elements being conductively joined to form a thermoelectric junction, at least one of said two elements consisting of an alloy of bismuth telluride and 5-40 mol percent bismuth selenide with from 0.13 to 0.34 percent by weight of a compound selected from the group consisting of copper sulfide and silver sulfide.

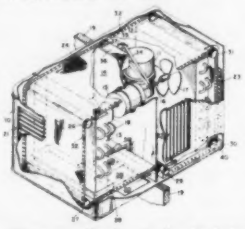
**2,902,567. TEMPERATURE RESPONSIVE CONTROL. Victor Weber, Greensburg, Hugh J. Tyler, Pittsburgh, and William J. Russell, Jeannette, Pa., assignors to Robertshaw-Fulton Controls Co., Greensburg, Pa.**



1. A thermostatic control device comprising switch means including a pair of movable contacts, means responsive to a temperature condition operatively connected to said switch means for effecting gradual displacement of one of said contacts relative to the other of said contacts during a changing value of the temperature condition, and cycling means oscillating continuously between a pair of operating positions and operatively connected to another of said contacts for periodically opening and closing said contacts in response to a predetermined change in the temperature condition, said thermally responsive means being operative to displace said one contact to gradually vary the time duration of engagement of said contacts during said periodic opening and closing of said contacts.

## *Week of Sept. 8*

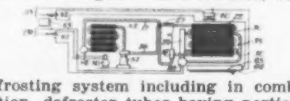
**2,902,834. AIR CONDITIONING APPARATUS. Cyrus M. Bosworth, Jr., Syracuse, and Raymond T. Divers, Camillus, N. Y., assignors to Carrier Corp., Syracuse, N. Y.**



5. In a method of deodorizing and filtering foreign particles from an air stream directed through a self-contained air conditioning unit including an evaporator and a condenser, the steps which consist in passing an odor-absorbing and filtering member adjacent the evaporator to cool the same, simultaneously interposing said member in the air stream to deodorize and filter the air stream, passing said member through a pool of condensate to absorb the same and to remove foreign particles from the member. . . .

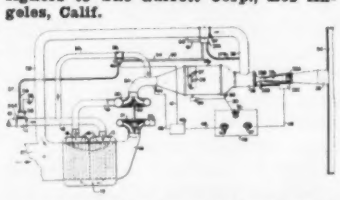
**2,902,835. REFRIGERATION DEFROSTING SYSTEM. John R. Boyle, Chicago, Ill., and David H. Gold, Hammond, Ind., assignors, by mesne assignments, to Bohn Aluminum & Brass Corp., Detroit, Mich.**

5. A defrosting system for a refrigeration coil structure which includes a plurality of coil portions through which a refrigerant is circulated, said



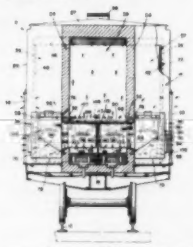
defrosting system including in combination, defroster tubes having portions in heating conducting relation with refrigeration coil structure, a heating chamber for containing a vaporizable heating fluid, said defroster tubes and said heating chamber being interconnected as a hermetically sealed unit, heating fluid in the sealed unit. . . .

**2,902,836. REGENERATIVE AIR CONDITIONING SYSTEM WITH BLEED CONSERVATION CONTROL. Dan B. Le May and James K. La Fleur, Palos Verdes Estates, Calif., assignors to The Garrett Corp., Los Angeles, Calif.**



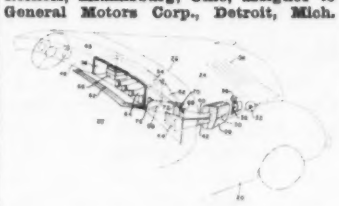
1. In a system for conditioning fluid supplied from a source to an enclosure: means for conducting fluid from said source to said enclosure; a bleed valve means for controlling the flow of fluid from said source to said conducting means; a cooler having first passage means positioned in said conducting means and second passage means arranged for the flow therethrough of a coolant in heat exchange relation to said first passage means for cooling said fluid. . . .

**2,902,837. AIR CONDITIONING SYSTEM FOR RAILWAY CARS AND UNIT-MOUNTING MEANS THEREFOR. Newton H. Willis, Waukesha, Melvin E. Erickson, Hales Corners, and James K. Armstrong, Waukesha, Wis., assignors to Waukesha Motor Co., Waukesha, Wis.**



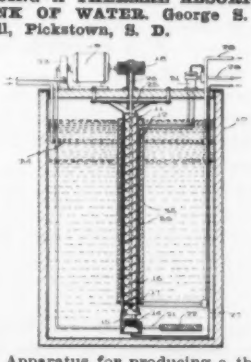
4. In an air conditioning system for railway refrigerator cars, the combination of a railway car body having a floor, upstanding side walls and end walls, and a roof structure, there being a rectangular opening formed in one of said side walls, a self-contained package type air conditioning unit removably mounted within said opening and having a front wall panel positioned substantially flush with the side wall when the unit is positioned within said opening, signal lamps mounted on said front wall panel for indicating the character of operation of said air conditioning unit. . . .

**2,902,838. AUTOMOBILE REFRIGERATING APPARATUS. Kermit D. Nichols, Miamisburg, Ohio, assignor to General Motors Corp., Detroit, Mich.**



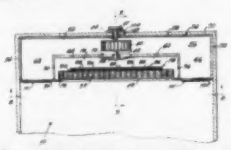
1. An automobile including a body provided with a cowl and a passenger space, a casing beneath the cowl provided with a door forming a compartment accessible to passengers, air cooling means, a second enclosure surrounding a major portion of said casing providing a fluid passageway between the casing and the enclosure....

**2,902,839. APPARATUS FOR PRODUCING A THERMAL ABSORPTION BANK OF WATER. George S. Marshall, Pickstown, S. D.**



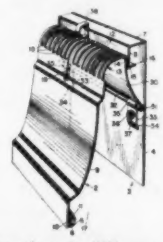
1. Apparatus for producing a thermal absorption bank of water having ice slush suspended therein comprising an upstanding closed receptacle adapted to contain a body of water, an upstanding closed tunnel positioned within said receptacle so that the lower end is adjacent to and spaced from the bottom of said receptacle and the upper end is adjacent to and spaced below the top of said receptacle, cooling means surrounding and extending the entire length of the exterior of said tunnel. . . .

**2,902,840. EVAPORATOR ASSEMBLY FOR A VEHICLE. Francis J. Smith, Chicago, Ill.**



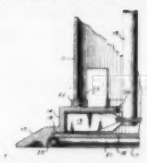
1. An evaporator assembly comprising an elongated air impermeable generally rectangular container, said container having a bottom wall and a top wall parallel thereto, a front wall and a back wall parallel thereto, and parallel end walls, a wall partition disposed parallel to the front wall and back wall between the top wall and bottom wall, said wall having a flow restricting central aperture therein and being spaced from the end walls of the container. . . .

**2,902,919. BASEBOARD DIFFUSER. Robert J. Waalkes and Alfred E. Kietzmann, Holland, Mich., assignors to Hart & Cooley Mfg. Co., Holland, Mich.**



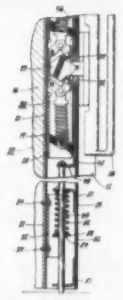
1. A baseboard diffuser adapted to be generally positioned in operative position at the juncture of the floor and wall of a room, said diffuser comprising a rear wall generally adapted to engage the wall of the room, a bottom wall generally adapted to engage the floor of the room, a front wall, a pair of end walls, said walls of said diffuser coacting to define an elongated chamber. . . .

**2,902,939. EVAPORATIVE COOLER PUMP. Elton T. Massingill, Fort WORTH, Texas, assignor to Lennox Industries, Inc., Marshalltown, Iowa.**



A pump comprising a horizontal base, a vertical cylindrical hollow body thereabove, a motor mounted on the upper end of said body and having the axis thereof in axial alignment with the axial center of said body, a circular pump housing in said base and a circular cavity in said base beneath said housing, the diameter of said cavity being larger than the diameter of said housing providing the shoulder therebetween. . . .

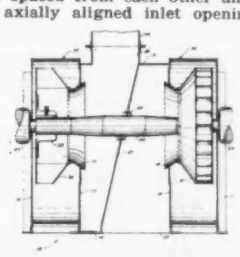
**2,902,952. REFRIGERATOR CABINET SAFETY DOOR Keith K. Kesling, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.**



1. In combination, a refrigerator cabinet member normally supported in an upright position having a compartment therein provided with an access opening and a hingedly mounted door member adapted to abut portions of said cabinet member for closing said compartment access opening. . . .

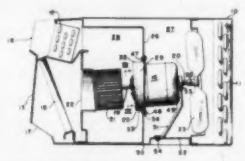
**2,903,182. FAN EQUIPMENT. Sewell H. Downs, Kalamazoo, Mich., assignor to Clarage Fan Co., Kalamazoo, Mich.**

1. A multi-stage, centrifugal blower assembly for moving a gas, comprising: first and second, single inlet and single outlet, centrifugal blower housings spaced from each other and having axially aligned inlet openings on



the opposing sides thereof; a pair of inlet cones secured respectively to said housings concentric with and adjacent to said inlet openings therein. . . .

**2,903,209. VIBRATION DAMPENING MOUNT FOR MOTOR. Robert D. Strub, Coralville, Iowa, assignor to Amana Refrigeration, Inc., Amana, Iowa.**



3. In a motor mounting for a window air conditioner, a motor having a

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GRADUATE MECHANICAL engineer. Ambitious, hard working self starter. Six years' experience includes 4 years of packaged equipment contracting—sheet metal, wiring, piping and installation. Two years with manufacturer includes production engineering, field testing, and manual writing on heat pumps. Seeking career in application-marketing engineering. BOX A6434, Air Conditioning, Heating & Refrigeration News.

AIR CONDITIONING and refrigeration mechanic with 18 years' experience; both installation and service of large equipment. Experience on low and high temperature refrigeration, heat pumps and marine refrigeration. Age 39. Like to locate in West or overseas. Write BOX A6435, Air Conditioning, Heating & Refrigeration News.

THINK BIG! 1960 Big! Air conditioning and refrigeration mechanic, commercial. 33 years of age, married, 10 years' experience on all types of refrigeration, 2½ years' college M.E. Desires work with aggressive firm. Prefer to locate near college so that I may continue education on part-time basis. BOX A6436, Air Conditioning, Heating & Refrigeration News.

### POSITIONS AVAILABLE

REFRIGERATION AND air-conditioning service mechanics with five years' experience in super-market field are needed to service "Acme Super Markets" in Long Island and North Jersey. Send resume to: W. COLSON, 185 Washington Street, Newark 1, New Jersey.

MANUFACTURERS REPRESENTATIVES and distributors to sell air conditioning and refrigeration jobbers and dealers. Complete line of quick scale removing materials and water treating chemicals. Lowest delivered prices in the industry. New polyethylene packages. Proven line. RATHBUN COMPANY, P. O. Box 5291, Houston 12, Texas.

MANUFACTURER'S REPRESENTATIVE wanted by STAR COOLING TOWERS, INC., experience in cooling tower application preferred. Open territories are: New Mexico; Colorado; Kansas; Missouri; Arkansas; Tennessee; Kentucky; North and South Carolina. Write P. O. Box 12244, Houston 17, Texas, or contact our corporation president who will be at Statler-Hilton Hotel, Dallas attending ASHRAE meeting.

RESEARCH ENGINEER—Refrigeration—Excellent opportunity for a man with initiative and creative ability in the arrangement of refrigeration systems and related problems in the development of vending machines. Very good salary and benefit program with an outstanding company. All replies are confidential; all responses will be answered. Please write to Maurice Udell, Personnel Department, VENDO COMPANY, Kansas City, Missouri.

EXPERIENCED AIR conditioning engineer, M.E. Degree, for exclusive Carrier distributor in south Florida, to service dealers and dealer projects. Great opportunity to become associated with top distributor in the industry. Send resume with experience and reference to: Mr. Douglas Howard, WEATHERMATIC CORPORATION, 3221 East 11th Avenue, Hialeah, Fla.

PRODUCTION MANAGER. Assume complete charge of production of packaged air conditioners. Location 50 miles from N.Y.C. State experience, education, age and salary requirements. Reply to BOX A6427, Air Conditioning, Heating & Refrigeration News.

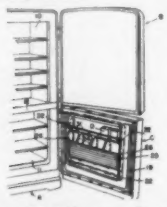
### EQUIPMENT FOR SALE

DEALERS, DISTRIBUTORS, agents—Remote air cooled - air conditioning. Heat pumps that defrost without reversing without loss of efficiency (patent applied for). High quality, competitive pricing. Some territory in North, East, and far West open—dealers anywhere. NATIONAL THERMATIC CORPORATION, Division of JOHN FELTER COMPANY, P. O. Box 7464, Houston, Texas.

# Patents *(Cont.)*

first hub at one end a second hub at its other end, a first support engaging said first hub, a second support, a mounting member and a substantially cylindrical embossment fixed to said member and receiving said second hub. . . .

**2,903,315. REFRIGERATOR DOOR STRUCTURE. Kenneth P. Schory, Bensenville, and Michael Turko, Waukegan, Ill., assignors, by mesne assignments, to Amana Refrigeration, Inc., Amana, Iowa.**



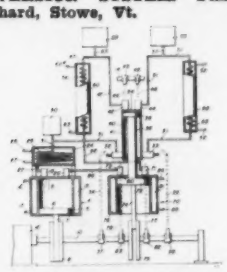
1. In combination, a door having a transversely extending inwardly opening compartment provided with a horizontal bottom constituting a horizontally extending shelf, and a series of laterally spaced vertically extending inwardly opening compartments immediately below said transversely extending compartment, said vertically extending compartments having a common bottom and being separated from each other by vertically extending members connected to and projecting downwardly from the underside of said horizontally extending shelf toward said common bottom, and a single horizontally extending upright rigid panel of less depth than the over-all height of said vertically extending compartments crossing said vertically extending members and terminally secured to said door. . . .

## Week of Sept. 15

**2,903,857. THERMOELECTRIC HEAT PUMP. Nils E. Lindenblad, Princeton, N. J., assignor to Radio Corp. of America, a corporation of Delaware.**

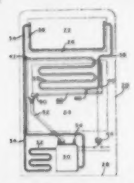
10. A thermoelectric heat pump structure comprising a plurality of channel members, each of said channel members having a web portion and flange portions, said flange portions depending from opposite sides of said web portion, said channel members being spaced from each other to provide a gap therebetween and disposed in a row with said web and flange portions thereof. . . .

**2,903,862. HEAT TRANSFER AND CONVERSION SYSTEM. Phillas J. Bouchard, Stowe, Vt.**



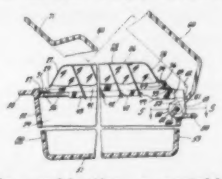
1. A heat pump system in which heat is supplied to a heat consumption device at predetermined temperature by an operating fluid comprising a first compression means for compressing the operating fluid from the initial pressure and temperature to a higher pressure and temperature, driving means for said first compression means a heat exchanger and a heat consumption device connected with the heat exchanger. . . .

**2,903,863. HEAT TRANSFER UNIT. Donald L. Coning, New Lebanon, Ohio, assignor to General Motors Corp., Detroit, Mich.**



A heat transfer unit including an upright metal plate composed of two metal sheet portions bonded together in some areas to form a unitary plate and separate in other areas to form a fluid passage, the sheet portions at one edge of said plate being separated and extending in a hook shape away from each to form liquid catching surfaces protruding from opposite sides of said plate, and a spout including a U shaped portion having upper turned in portions extending over and engaging the outer edges of the hook shaped extensions.

**2,903,865. ICE BLOCK RELEASER AND STORAGE BUCKET. Lloyd M. Keighley, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.**

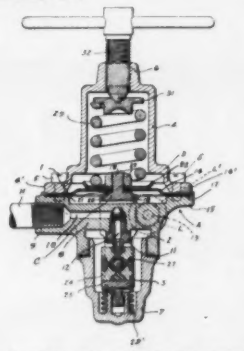


6. In combination, a portable combined ice block releasing and storage bucket element having a cover element pivotally mounted thereon and swingable relative thereto for opening and closing said bucket, means on one of said elements for receiving and supporting a unitary freezing device containing ice blocks separated by tiltable grid walls locked in a tray of the device against detachment therefrom. . . .

**Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.**

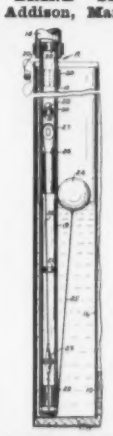
**Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Address orders to: Commissioner of Patents, Washington 25, D. C.**

**2,904,060. VALVE SEAT STRUCTURES. Irwing P. Fausek, Clayton, and Willis L. Reedy, St. Louis, Mo., assignors to Modern Engineering Co., St. Louis, Mo.**



1. A valve seat structure comprising a valve seat block, a plurality of valve seat cavities formed in said valve seat block, a valve seat disposed in each of said valve seat cavities, a mounting member extending centrally through said valve seat block, and means for tying said valve seats together so that they will form parts of an integral structure, said means including a central portion embracingly supporting at least a portion of said mounting member.

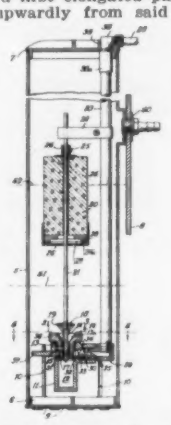
**2,904,061. BRINE TANK VALVE. Harry W. Addison, Marshall, Minn.**



1. An adjustable valve for softener brine tanks and the like comprising an upstanding hollow tube, a pair of spaced apart valve seats disposed within the tube, a valve assembly working in said tube between said valve seats, yieldable means urging said valve out of seated position in the lower seat. . . .

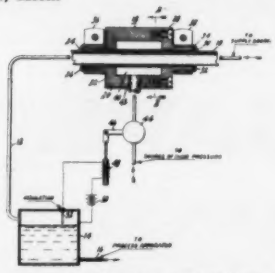
**2,904,062. FLOAT VALVE. Thomas W. Techler, North St. Paul, Minn., assignor to The Lindsay Co., St. Paul, Minn.**

1. A float valve comprising, a casing normally submerged in liquid in a container and having an internal chamber, a first elongated passage extending upwardly from said chamber



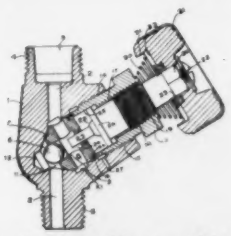
and having an upper end communicating with said container, valve seats surrounding the upper and lower ends of said passage respectively, said casing being formed with a recess surrounding the upper end of said passage, a rigid valve stem movable substantially coaxially in said passage. . . .

**2,904,063. FLOW CONTROL MECHANISM. James R. Wall, Dayton, and Robert D. Powell, Trotwood, Ohio, assignors to General Motors Corp., Detroit, Mich.**



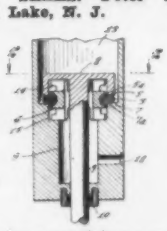
1. An apparatus for controlling the level of fluid in a container where the fluid is being continuously withdrawn therefrom, comprising in combination; a container having an inlet and an outlet, a fluid source for supplying fluid under pressure to said container, conduit means for connecting the fluid source with the inlet of said container. . . .

**2,904,071. VALVE. Joseph A. Stein, Pittsburgh, Pa., assignor to Bacharach Industrial Instrument Co., Pittsburgh, Pa.**



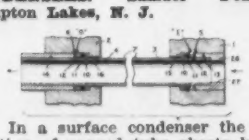
1. A valve assembly comprising an elongated housing having one bore with the axis thereof extending longitudinally through the housing to permit the passage therethrough of a fluid, and a second bore therein disposed at an angle to the first bore and located to intersect said first bore with its inner end terminating inside said housing on one side of said longitudinally disposed bore and its outer end extending through the housing wall. . . .

**2,904,072. VALVES HAVING RESILIENT SEALS. Peter H. Palen, Mountain Lake, N. J.**



1. A valve comprising a pair of nose pieces having two opposing valve seats spaced apart in the axial direction of the valve and movable axially with respect to each other, said valve seats having seating surfaces substantially transverse to the axis of the valve, each nose piece having a longitudinal surface in the direction of the axis. . . .

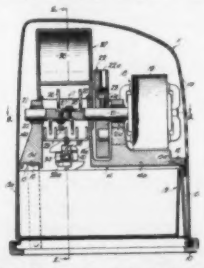
**2,904,315. PACKING MEANS FOR THE TUBE JOINTS IN SURFACE CONDENSERS. Samuel Pennella, Pompton Lakes, N. J.**



1. In a surface condenser the combination of spaced tube sheets having end receiving openings therein, and tubes extending from one tube sheet to the other and mounted in aligned openings in the respective tube sheets, each of said tube receiving openings being counterbored from the outer face of the tube sheet, fluid tight means for each of said tubes mounted in the respective counterbores of one of said tube sheets for fixedly holding the end of each of said tubes in the respective tube sheet. . . .

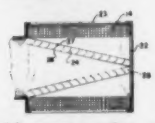
**2,904,268. ICE CRUSHER. William A. Chappell, Lees Summit, and Robert J. Scott, Blue Springs, Mo., assignors to John C. Hockery, Kansas City, Mo., trustee.**

1. In an electric motor driven ice crusher, a motor support block, an electric motor mounted on said block and having a horizontally disposed armature shaft projecting axially from one end of the motor, an armature shaft bearing bracket extending



upwardly from an integral with said block, said shaft extending through a bearing aperture in said bracket. . . .

**2,904,316. COLD ROOM COOLER FOR MEATS AND OTHER PERISHABLE PRODUCTS. Harold F. Hagen, Wilmette, and William F. Hagen, Northbrook, Ill., assignors to The Union Stock Yard & Transit Co. of Chicago, Chicago, Ill.**



1. A cold room cooler of the type described comprising an elongate housing having a fan section at one end and a cooling section communicating with the outlet of the fan section, a circulating fan in the fan section for withdrawing air from within the room and from which it issues into the cooling section. . . .

## Frigidaire Inducts 94 Members Into Goal-Maker Club

NASSUA, Bahama Is. — Ninety-four new members for 1959 were inducted into the Frigidaire Goal-Maker club, "an exclusive group of top appliance sales leaders" from Frigidaire's distributing organizations across the country, during the second annual inaugural conference here.

Installed as president was Robert W. Dixon, a division manager of Frigidaire's Fort Worth Branch. Described by C. H. Menge, Frigidaire's general sales manager, as a "salesman's salesman," Dixon is the top Frigidaire division manager of the entire nation this year.

Melvin W. Cree, a division manager of Sunset Electric Co., Frigidaire distributor in the Spokane, Wash. area, was installed as executive vice president.

Other officers: Hershel C. Hopper, a division manager of McGregor's Inc., Frigidaire distributor in Memphis, Tenn., executive secretary, and Larry W. H. Burton, a division manager of Refrigeration Equipment Co., Frigidaire distributor in Indianapolis, executive treasurer.

**NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.**


# THE HEAT PUMP— A TOTAL LOOK

The demand for the material contained in the Heat Pump Issue has been so great that Technical Editor Frank J. Versagi has compiled a Heat Pump Handbook containing the material from the Heat Pump Issue plus new information gathered since the original issue in September.

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# Secondary Boycott-- Office Manager To Stand Trial

*(Concluded from Page 1, Col. 2)*

use of members of the Laborers' union to install heavy pipes leading up to the building.

The third company is Fred Weller & Son of Milltown, N. J., which is not subject to the procedures of the National Joint Board for the Settlement of Jurisdictional Disputes in the Construction Industry.

The charges are that Local 380 refused to refer workers, or give union clearance to Boro's supervisors, in an effort to force American Cyanamid to stop doing business with Weller.

As a result of the union's action, it is alleged, the Boro company has not been able to start its work because it has been unable to obtain pipefitters.

The agreement which the union entered was as follows:

(1) Respondent Local 380 will not fail or refuse, upon request, to grant clearance to one foreman employed by Boro to perform services for his employer on the Cyanamid project; or

(2) Respondent Local 380 will not fail or refuse, when available, to clear and furnish Boro with such individuals as Boro may from time to time request for work on the Cyanamid project; or

(3) Respondent Local 380 will not in any manner or by any means, including orders, directions, instructions, requests, or appeals, however given, made or imparted, fail or refuse to give clearance to, or to clear and furnish workers to Boro for the Cyanamid project, or by any like or related acts or conduct, or by permitting any such to remain in existence or effect, engage in, or induce or encourage any individual employed by Boro, or by any person engaged in commerce or in an industry affecting commerce, to engage in, a refusal in the course of his employment to use, manufacture, process, transport, or otherwise handle or work on any goods, articles, materials, or commodities or to perform any service, or in any manner or by any means, threatening, coercing, or restraining Boro, Cyanamid, or any other person engaged in commerce or in an industry affecting commerce, where in either case an object thereof is to force or require Boro, Cyanamid, or any other person, to cease using, selling, handling, transporting, or otherwise dealing in the products of or to cease doing business with Weller.

The injunction case was being held on the court's docket subject to being called for hearing should the general counsel find that the union has violated it.

The union's refusal to give clearance to a supervisor, who is reported to belong to another local of the Plumbers' Union, is alleged to violate the new amendment which forbids a union to encourage "any individual" employed by any person in interstate commerce to refuse to perform services as part of a secondary boycott.

The refusal to refer employes on a union construction job is alleged to violate the new provision which forbids a union "to threaten, coerce, or restrain any person engaged in commerce or in an industry affecting commerce, where . . . an object thereof of . . . forcing or requiring any person . . . to cease doing business with any other person. . . ."

Rothman simultaneously authorized the issuance of a complaint to start proceedings before the five-member NLRB.

*(Concluded from Page 1, Col. 2)*

zona Refrigeration Supplies, a wholesaler of air conditioning and refrigeration parts or supplies with branches in Tucson and Yuma, or its financial structure, states William W. Miessemer, president of the firm.

Because of the manner in which it was done, the fact that such monies as were siphoned out of the business were apparently taken out in small amounts over a six or seven-year period, the losses went undetected and were not reflected in the firm's financial structure.

Maddox was office manager and accountant at the Phoenix headquarters, and the matter came to light when a business consultant checked into some phases of his work. Maddox left Phoenix and went to Los Angeles, but reportedly called Miessemer and confessed to the embezzlement.

"This shortage occurred through a manipulation of 'daily cash receipts' and by the accountant writing checks for 'cash' and pocketing the money," Miessemer told the NEWS. "The pocketing of the money was covered up by charging these funds to 'purchases' through a journal entry.

"While the company would naturally be much better off financially had this unfortunate affair had not occurred, because of the method in which the shortages had been covered up, the discovery did not further weaken the company's financial position as of the date of the discovery."

Miessemer is president of the Air-Conditioning & Refrigeration Wholesalers, national association of supplies wholesalers, and he said the circumstances should provide a warning to other wholesalers.

"We strongly recommend that each one examine his internal procedures, and take necessary precautions to prevent such an occurrence in their organization. This sometimes is extremely difficult when you have a limited number of employes to whom you must distribute a work load. However, every human effort should be made to safeguard company funds and prevent collusion."

## Walter H. Roth Dies At Church Meeting

MILWAUKEE — Walter H. Roth, 65, president and treasurer of Roth Appliance Distributors, which he founded in 1939, collapsed and died of a heart attack recently while attending a church meeting, it was indicated.

## Lau Names Weaver Market Research Mgr.

DAYTON—Ralph Weaver has been appointed manager, market research, for the Lau Blower Co., according to T. I. Byrd, president.

Weaver will guide and direct the firm's market research activities covering all products made by the firm in Dayton, Irwindale, Calif., and Kitchener, Ont., Can. plants.

"This is a new position within our company," Byrd said. "It reflects the increasing need for more accurate market data covering our products which are now the most diversified in our 27-year history."

Prior to his new appointment, Weaver was administrative assistant to W. W. Morrissey, blower sales manager. He has been associated with Lau for the past four years.

## Norge Shipments Hit High

CHICAGO—Domestic factory shipments of Norge home appliances in 1959 exceeded 900,000 units, a record for any year in the company's 33-year history.

"Volume will near $120,000,000, up 29% from $93,000,000 in 1958," said Judson S. Sayre, president of the Norge Div.


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